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ARCHITECTURAL EDUCATION

PART 1—THE SCHOOLS

BY C. H. BLACKALL, F. A. I. A.

THE teaching of architecture in special technical schools has been in operation in this country since 1875. The schools have been working intelligently, faithfully and untiringly and are turning out an increasing number year by year of young men who come to us for employment. Very seldom does an architectural student pass directly into a partnership or an independent business. He admittedly is only partially prepared for actual work when he receives his diploma, and he looks forward to a term of years before he can call himself a full fledged architect. Inasmuch, therefore, as the schools are direct feeders of the architects' offices, and inasmuch as the graduates of the school look to the offices for their post graduate opportunities, we have a right to expect that the young men shall be available for our purposes. The serious question, then, is, do the architectural schools educate?

There are two distinct categories of architectural schools. The first undertakes to train subjectively, endeavoring to prepare a young man for earning good wages at once, this category including institutions like the Y. M. C. A., some of the technical schools, and what we would class in general as second rate architectural schools. The second considers that the training should be wholly objective, that the young man should have a grounding which will enable him, more or less later in life, to become a practicing architect, and that the school training as such need not encumber itself with the subjective topics. This is the point of view which seems to prevail in most of the universities and architectural schools of the highest grade. Both classes start with nothing as far as relates to architecture. The first assumes a man wants to earn at once and will get his culture in practice, while the higher universities assume that culture can best be taught in school and the subjective training acquired in practice.

Now as a matter of personal opinion, neither of the schools turns out just the kind of men the offices want. This may seem a sweeping statement and it is not intended to lessen the value of the excellent work the schools have done, but personal experience as well as frequent discussions of the subject with practicing architects seems to show that the young men who come from our higher schools lack in the very qualities which enable them to profit at once by office experience, and the young men in the lesser schools fail to get the point of view which will enable them to grow in the profession, and are apt to slip back into builders' assistants, engineering draughtsmen and the like. Both points of view are right in a way, and both are wrong in a way. If we try to measure the architectural equipment of most of the young men who come from the architectural schools, and this is not denying there are many brilliant exceptions, we find that these men generally cannot draw in the sense of being independent of mere technique. We find they have many high ideals, plenty of enthusiasm and a very limited power of architectural speech, and they generally come to us with the feeling that they have somehow or other imbibed a mysterious quality which might be termed fundamental culture, by grace of which, though they may stumble in the first few years of their office experience, they will ultimately because of it attain to the goal to which they aspire. Again this is a question of definition and calls for a clear understanding of what are the essentials in an architectural education, for right on that point would seem to pivot the whole scheme by virtue of which an architect is evolved.

While there are abundant exceptions, the rule seems to be that real architectural culture is not really acquired in any of the schools. A young man spends four years in intensive and extensive study. He begins those four years poorly equipped and with no architectural baggage, and by the time his course is run, he is just about beginning to know a little of what he wants. He has reached his real commencement. He will have acquired a critical knowledge, by aid of which he will pos-

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sibly be able to discriminate wisely between the faults and virtues of the work he sees before him, but this quality is often a handicap, and in this connection one cannot forget the admonition that is so often given to the young men who travel for study abroad, "Don't knock the old masters"—for the average boy who comes out of college is very apt to do just that thing and to assume that because he can be critically discerning, he can, therefore, be intelligently creative, which is a very different thing. The idea of the higher architectural schools is excellent if it were really possible to carry out their programme, and the subjective training of the lower grade of architectural schools certainly is a business help, but fails to take account of that very potent factor in architectural development, the imagination. But judged by its results, the schools which take only the subjective attitude are doing work which ought not to be a part of a man's purely architectural schooling, and the other schools are assuming that culture, however you may define it, can be taught in school. The experience of the whole world is against this latter point of view as we understand it. An architect does not often find himself until many, many years after graduation. The architectural spirit does not come by instruction, but by slow growth and constant exercise, and in assuming that the architectural schools of the higher class are giving the cultural training which of itself enables a man to be an architect in the best meaning of the word, a mistake is made which may require many years of apprenticeship to set right.

Now the teachers with whom this subject has been discussed reply that they are not aiming to train potential draughtsmen but potential architects, and there is the real point of the whole matter. We architects who look to the schools for our recruits do not want potential architects, but we want draughtsmen first and it is our job to make architects out of them. We judge by the product, and however earnest and intelligent the objective teaching may be in the schools, it does not give us what we primarily want, and that is young men who can slip right into line and do our work. Give me a man who can draw, who knows history and can make an intelligent plan, and in the daily round of real practice he will get his culture, will find himself, and will probably do this more quickly, more thoroughly and more efficiently than a man of exactly similar endowment who had gone through the objective training of the school. The real fundamental condition for growth is to know your job and how to handle it. The triumphs come later, and the air castles will come after we have trod the path of the architectural draughtsman.

It would be unfair to say all this without at least indicating some way by which what we want might be achieved, with the existing agencies. Excellent as the product of the schools now is, we feel it can be made a great deal better and more readily available, and it is the province of the architect to tell the schools frankly what is wanted in the profession, and then as far as possible, see that the schools give it. It would not require such a sweeping change in the methods of training. Primarily give up the idea that the polishing necessary to real culture can be acquired in school better than it can be acquired in practice. Then relieve the burden of the existing schools by a more careful selection of candidates, following the famous recipe for cooking hare,—"first find your man"—and require that nobody shall be eligible for an architectural school unless he can draw, not merely mechanical drawing, but a certain amount of freehand drawing as well, so that he starts on his career without the handicap of not knowing the language. Also require all applicants for a course to be grounded in the elements of architectural history so that this work in its dry details can be kept out of the curriculum. Then why not abolish an arbitrary division by years? It has already been done in principle in some of the schools with good success; it ought to be in all of them—and the measure of a man's ability should not be estimated by the length of time he has spent in school. Then beyond this encourage the fraternity spirit by putting all in one big class, much as is done in the ateliers abroad, where the weak draw from the strong, and the strong see their own limitations reflected and the tone of the whole is measured by the best rather than by the average. This is possible, as has been abundantly shown in the few attempts made to introduce the atelier system in our universities. Then from the very first study architectural history not as archæology, not as mere history, but as applied architectural mechanics, and study it not merely in periods but study it in relation to individual problems so that when the young man comes out from the school he can know that in a certain kind of problem he will obtain encouragement and help from a certain kind of historic precedent, and he will not be at a loss to know where to find this precedent. Then there is a study so difficult to define, but which every practitioner must come to in architecture, the practical esthetics of construction, not steel girders, and beams, nor walls, nor foundations, but the constructive sense which enables a man to plan a structure which can be built and to plan it so that the construction is fundamental and vital rather than a mere aggregation of engineering details. And always treat the university or school course as only the first step in education, enabling the student to qualify for the real education of the office.

And finally, through all the course the man

should create architecture. If this sounds like a large order, it is not intended as such, for architecture is many sided and the man can begin on the simplest forms, but having in mind always the application of historic precedent to the evolution of orderly, rational planning. If the man's time is filled with just these points,—drawing, history of architecture, esthetics of construction and design to the exclusion of nearly everything else, if he has the real architectural spirit in him, he will come out an efficient helper for a practicing architect. If he has not the real stuff in him, he is not the kind of man that should be considered at all, and no diploma should be given a man until he has demonstrated in his school course that he can draw and can intelligently create and understands History of Architecture. Such things as plumbing, heating, or the multitudinous so-called practical elements can all be safely relegated to the office, or at most taught only in general lines, and the teaching confined to the first months of the student's life, leaving all of his subsequent time free for drawing and design. We do not ask our young men to be proficient in these, we are glad if they are, but they generally have so feeble a smattering of them one cannot help a conviction that the time spent on such studies in college is a sheer waste. We want men who will draw and draw intelligently, and for the rest, we want them to grow up in our lines and get our ideas, improve them if they can, but being our helpers and not objects of personal adornment in the office.

Whatever has been said is not intended as any intimation that the schools are not doing excellent work now. It is simply that the point of view of the practicing architect is seldom presented to them and we have grown into a habit of accepting as final the point of view of the architectural professor. In some respects it is final. Some of the best of them have exactly the views as have been outlined here, but there is need of more emphasis on the necessity for turning out men who can earn their living by helping architects, not some time in the dim future, but right now. No man ever acquired architecture in college. It is a creature of too slow growth for that. We do not expect our boys to fly before they walk, but we want them to come to us able to speak the language and use the tools of their profession.

THE SACRED DRAGON

Designed by Arthur Crisp and executed in Faience

XUM

OBITUARY

Evarts Tracy

LIEUTENANT COLONEL EVARTS TRACY, D. S. C., died on Tuesday, January 31, after a short illness in Paris, France, while engaged in reconstruction work in the devastated regions around Rheims. A graduate of Yale in the Class of 1890, he studied for three years at the Ecole des Beaux Arts and after a short time in the office of McKim, Mead and White commenced independent practice of his profession in 1896, and formed the firm of Tracy and Swartwout four years later. The work done was extremely varied in character,—some domestic and commercial, but the bulk of it monumental. The Hotel Webster and the Home Club in New York were early examples and of the later work won in competition, the Denver Post Office, the Missouri State Capitol and the Milford Town Hall were the most prominent. The Victory Memorial Building for the George Washington Memorial Association, the cornerstone of which has just been laid, was won in competition in 1914.

Tracy had always a great interest in military affairs, was at Plattsburg for two years and at the outbreak of the war was commissioned Major of Engineers. He served with distinction here and abroad and was in charge of the Camouflage Section and an instructor in camouflage, and has written many articles on that subject. He was promoted to the rank of Lieutenant Colonel and was recently awarded the Distinguished Service Cross. Personally Tracy was a very lovable character. At college he was the most popular man in his class and in his profession and in the Army he was the friend of everyone who knew him, and he knew everybody. He was at home everywhere and was vitally interested in everything that went on. His specialty, as he often said, was miscellaneous information. There was not a subject on which he could not converse intelligently; with the medical profession he talked like a doctor and among lawyers he would pass as a lawyer, and when he entered the Army it seemed as if he had been a soldier all his life. He liked it and he looked it, and he gave his life to it, for the fatal attack of heart disease which carried him off in the midst of his reconstruction work was directly attributable to an accident in a trench at the Front. He lived his life to the full and he enjoyed every minute of it. He died as he would have wished to die, in the vigor of life and in the midst of the work he had loved. He was a man and a lovable man, and the fact of having known him is a pleasant memory.

Austin W. Lord

AUSTIN WILLARD LORD, architect, member of the architectural firm of Lord & Hewlett, 2 West 45th Street, New York City is dead. Mr. Lord spent three years in architects' offices in Minneapolis, and after studying at the Massachusetts Institute of Technology received in 1888 the Rotch Scholarship with a two years' trip abroad. He was director of the American School at Rome from 1894 to 1896. He was also formerly director of the School of Architecture at Columbia University, New York City. He was architect of the Isthmian Canal Commission in 1912, chairman of the City Plan Committee of Columbus, Ohio, and designer of many important structures, among them being Senator Clark's house on Fifth Avenue, New York City.

William Henry Miller

ANNOUNCEMENT is made of the recent death in Miami, Fla., of William Henry Miller, architect, who had been spending the winter there. Since 1870 Mr. Miller practiced his profession in Ithaca, N. Y., where there can be found many churches and private residences designed by him, as well as many of the university buildings. Examples of his work are also found in Chicago, New York, Boston, Washington, Albany, Rochester, and many other large cities throughout the country.

Beaux-Arts Institute of Design

DIRECTOR OF THE INSTITUTE, LLOYD WARREN

ARCHITECTURE, RAYMOND M. HOOD
INTERIOR DECORATION, ERNEST F. TYLER
SCULPTURE, JOHN GREGORY
MURAL PAINTING, ERNEST C. PEIXOTTO

OFFICIAL NOTIFICATION OF AWARDS—
JUDGMENT OF JUNE 7TH, 1921

PROGRAM

CLASS "B"—V ANALYTIQUE

The Committee on Architecture proposes as subject of this Competition:

"A TWO STORIED PORTICO"

The owners of an important business building on the main thoroughfare of a large city have decided, in order to give dignity and importance to the building, to make the entrance in the form of a recessed portico, running through two stories.

The inside length of the portico shall not exceed 35'-0", and its depth from the face of the building to the face of the back wall of the portico shall not exceed 15'-0". The interior height of the portico shall not exceed 30'-0", its floor being approximately at the street level. The columns or motifs supporting the front wall of the building shall not project more than 1'-0" beyond the face of the building.

One of the classic orders shall be used in the development of the motif forming the portico.

Jury of Awards:—H. O. Milliken, J. W. Cross, H. R. Sedgwick, W. Emerson, H. C. Ingalls and J. F. Harbeson.

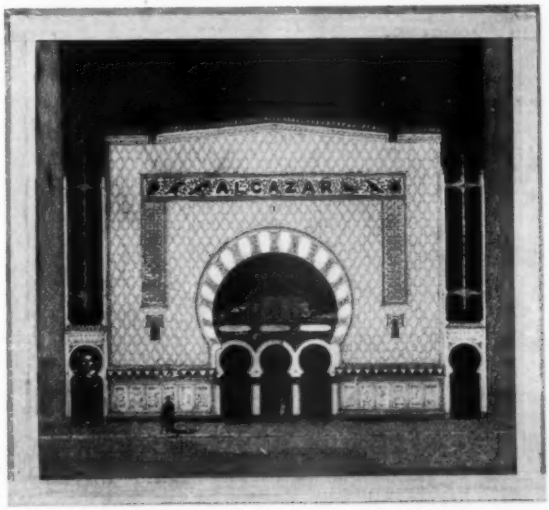
Number of Drawings Submitted:—139.

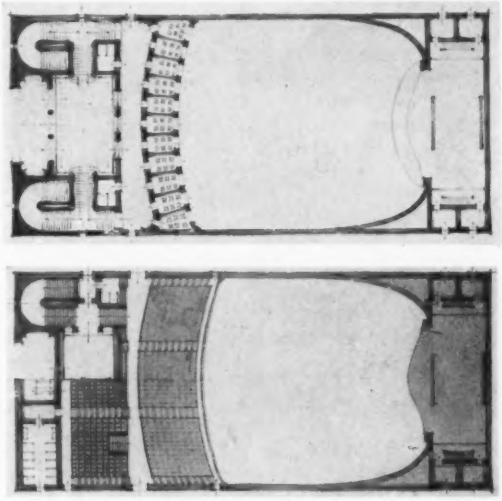
AWARDS:

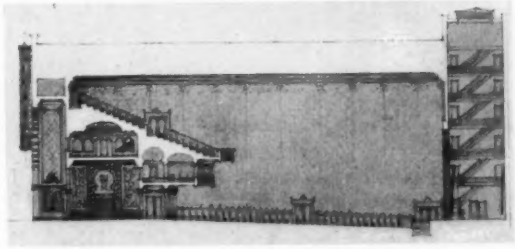
FIRST MENTIONED PLACED:—H. S. Torbett, Carnegie Inst. of Tech.

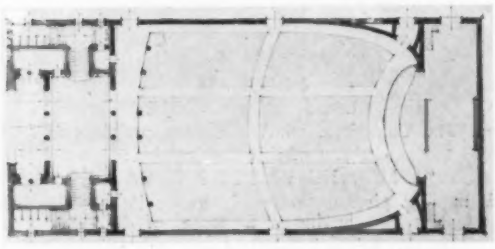
FIRST MENTION:—C. Forrester, Atelier Corbett-Gugler, N. Y. C.; F. L. Soars, George Washington Univ.; L. Hauf, Jr., "T" Square Club, Phila.; H. Compton, Univ. of Kansas; E. Galante, Atelier Wynkoop, N. Y. C.; R. W. Ramsdell, Yale Univ.

MENTION:—J. S. Crytzer, Boston Archtl. Club; C. H. Disque, Cincinnati Archtl. Soc.; H. Johnson, Atelier Cairns, Memphis; G. D. Schade, V. A. McGowan, J. S. Wood, M. A. Brace, B. H. Lawson, W. Z. Bane, E. M. Russell, M. B. Parker, A. B. Lowstuter, A. M. Felstein and K. O. Sonneman, Carnegie Inst. of Tech.; C. E. Sheffield, Atelier Denver; C. M. Woodward, F. A. Elliott, Dorothy Sigman, C. L. Nutt, W. F. Harvey, C. W. Jones and L. Chatelain, Jr., George Washington Univ.; O. L.









L. B. Christman

Carnegie Institute of Technology

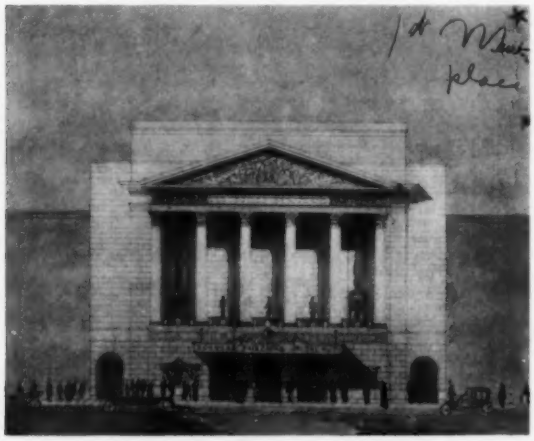
1st MENTION PLACED
Class "B"—V. Projet—A Moving Picture Theatre

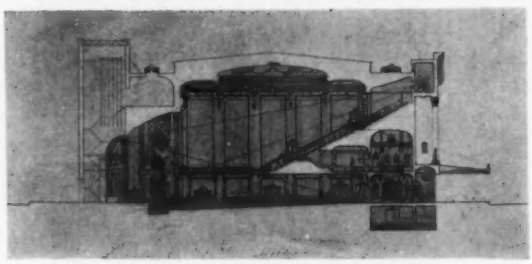
Warady, A. F. Euston and H. W. Naylor, Atelier Hirons, N. Y. C.; D. Jansen, L. H. Schofield and J. Delmissier, John Huntington Poly. Inst., Cleveland; J. Daniels, Los Angeles Archtl. Club; B. L. Schlanger, Harlem Even. High Sch., N. Y. C.; E. Leveque, C. K. Kruchten and F. Eiseman, Atelier Parsons-Chic. Archtl. Club; C. I. Cromwell and J. Wassum, Syracuse Univ.; H. S. Shaw, W. H. Lewis and W. M. Haslett, "T" Square Club, Phila.; O. Nicholson, Eva McCanles, A. A. Graves, Jr., G. Beal and F. X. Thorne, Univ. of Kansas; A. E. Fulton, J. C. Jordon, F. Tai Lau, V. L. Annis, V. C. Edades and D. T. Lopp, Univ. of Washington; W. K. Cooper, R. N. Waters, E. F. Webster, V. D. Phenix, E. H. Sammons and C. C. Wright, Univ. of Texas; A. D. Baker, R. H. Crawford and D. L. R. Bartels, Univ. of Southern California; G. M. Wolff and J. M. Bradway, Univ. of Oregon; L. A. Gudebrod, Yale Univ.

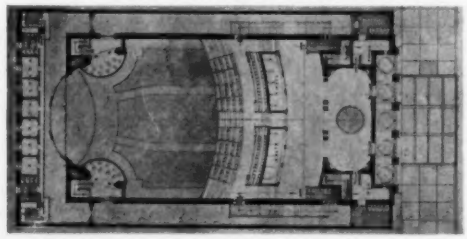
control, convenience of the patrons, and economy of operation and space shall be as great as possible. Exit courts not less than 10′-0″ wide, open to the sky, shall be left at each side of the building, and sufficient exits shall be provided so that the theatre can be emptied within three minutes.

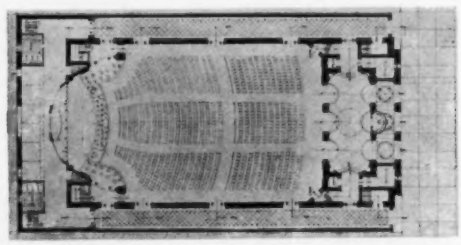
In studying the seating capacity of the theatre, while it is of importance that this shall be as large as possible, at the same time it should be remembered that a good view of the screen from every seat is essential, and that the comfort and convenience of the patrons should not be sacrificed. A certain number of the higher priced seats shall be provided in loggias or open boxes, either on the floor or in the balcony, and a space reserved for "standing room."

Jury of Awards:—R. M. Hood, F. A. Godley, F. C. Hirons, E. V. Meeks, H. B. Herts, W. VanAlen, H. C.









1st MENTION PLACED

H. Van der Lyn

Atelier Hirons, New York City

Class "B"—V. Projet—A Moving Picture Theatre

PROGRAM

CLASS "B"—V PROJET

The Committee on Architecture proposes as subject of this Competition:

"A MOVING PICTURE THEATRE"

A moving picture theatre is to be built on a level rectangular plot having a frontage of 100′-0″ on an important street and a depth of 175′-0″. The purpose of this theatre is naturally the showing of moving pictures, but at the same time an orchestra and other forms of entertainment will be used in conjunction with the pictures, and in the study of the problem, the following provisions should be made to this effect.

The stage behind the curtain upon which the projections are thrown shall have a depth of approximately 20′-0″, and in connection with this stage there shall be dressing rooms and other accessories. In front of the curtain a space for an orchestra of twenty (20) musicians shall be provided.

The ticket office, lobbies, staircases, offices, smoking and toilet rooms, etc., shall be so arranged that the

Butler, W. K. Rainsford, H. W. Gardner and A. E. Flanagan.

Number of Drawings Submitted:—168.

AWARDS:—

FIRST MENTION PLACED:—L. B. Christman, J. M. Franklin, Carnegie Inst. of Tech.; H. Van Der Lyn, Atelier Hirons, N. Y. C.

FIRST MENTION:—C. Landefeld, J. W. Minick, E. O. Anderson, J. C. Topnick, E. W. Klee, Carnegie Inst. of Tech.; W. Conley, Columbia Univ.; A. E. Thomas, Dallas Archtl. Club; R. L. Linder, Atelier Denver; J. W. Hanson, Atelier Hirons, N. Y. C.; H. F. Baldwin, L. R. Vernon, and M. S. Dimmock, Mass. Inst. of Tech.; R. Damberg, Univ. of Minnesota.

MENTION:—E. Weston, Boston Archtl. Club; M. D. Smith, T. R. Hinckley, H. C. Kreisle, W. T. Spann, J. B. Blair, T. G. Tiffany, F. M. Highberger, M. C. Bert, L. C. Page, H. A. Page, C. J. Billmeyer, G. A. Fister, Louise Barton, J. Delo, P. F. McLean, H. Douden, G. A. Brink, C. F. Bowers, A. Schoept, M. G. Uslan, A. Taormina, G. O. Schoonover, C. J. Pellegrini, R. Pat-

terson, W. L. Gibb, Jr., E. Hughes, J. J. Keil, K. H. Snyder and P. C. Reed, Carnegie Inst. of Tech.; O. W. Wilson, W. E. Page, F. J. Woodbridge, P. Simonsen, J. M. Paul, A. M. Taylor, S. R. Moore and H. C. Porter, Columbia Univ.; R. C. Danis, P. F. Dowling and W. R. Furey, Catholic Univ., Wash., D. C.; H. A. Surman, Dallas Archtl. Club; E. W. Cappelmann and A. E. Constantine, Georgia Sch. of Tech., Atlanta; T. J. Rowland and W. Harris, George Washington Univ., Washington D. C.; K. Sasagawa, Atelier Hirons, N. Y. C.; E. L. Babitsky, E. C. Rising, G. S. Johnston and L. A. Balicki, John Huntington, Poly. Inst., Cleveland; P. Duell and P. E. Murphy, Los Angeles Archtl. Club; Miss F. Day, H. W. D. Archibald, R. L. Albert, B. A. Weber, A. H. Pierce, H. R. Wiggs, L. M. Cheves, Miss E. Hemmenway, E. G. Pennell, G. D. Swan, Miss M. Pierce, W. R. Amon, Miss E. P. Stickney, D. J. Luykx, I. Georgevitch, A. J. Frappier, S. M. Ryerson, Miss M. Mall, A. H. Vignoles, A. L. Jones, C. C. Carven, G. S. Holderness, C. H. Mahlenberg, Jr., and R. Hayward, Mass. Inst. of Tech.; D. R. Lundberg, R. E. Dando, G. M. Nedved and T. Ross, Jr., Atelier Parsons-Chicago Archtl. Club; F. A. Comstock and H. D. Baker, Princeton Univ.; W. P. Crabtree, Jr., and B. C. DeMello, Syracuse Univ.; W. R. Fisher, E. S. Young, E. A. Beihl, C. A. Langzettel, H. T. Plumer and J. H. Geissel, "T" Square Club, Phila.; R. N. Hazlewood, Alice V. Little, A. D. Wills, A. R. Melander, E. Larson, H. H. Haines, M. L. Anderson, O. Thorshov, G. A. Stewart, H. Gerlach and H. A. Kreinkamp, Univ. of Minnesota, M. W. Gill and D. A. Seibert, Univ. of Washington, R. A. Herthel and R. R. Hibbs, Univ. of Kansas; C. B. Lewis, D. M. Campbell, A. G. Clay, H. S. Kelly, M. Pardo, W. Douglas, P. E. Isbell, B. S. Georges and V. M. Reynal, Yale Univ.

H. C.:—F. B. Smith, W. M. Burke, V. H. Stromquist, H. H. Lefkowitz, R. A. McKee and F. H. Floyd, Carnegie Inst. of Tech.; L. R. Levy, Georgia Sch. of Tech., Atlanta; S. M. Palm, Atelier Hirons, N. Y. C.; F. K. Cheetham, Atelier Parsons-Chicago Archtl. Club; H. A. Allen, "T" Square Club, Phila.

SUPPLEMENTARY JUDGMENT

MAY 24TH, 1922

CLASS "A"—V ESQUISSE-ESQUISSE—"A CEILING DECORATION."

NUMBER OF DRAWINGS SUBMITTED:—4.

AWARDS:—

MENTION:—M. L. Colean, Columbia Univ.

CLASS "B"—V ESQUISSE-ESQUISSE—"AN ARTIST'S STUDIO."

NUMBER OF DRAWINGS SUBMITTED:—4.

AWARDS:—

FIRST MENTION:—W. Conley, Columbia Univ.

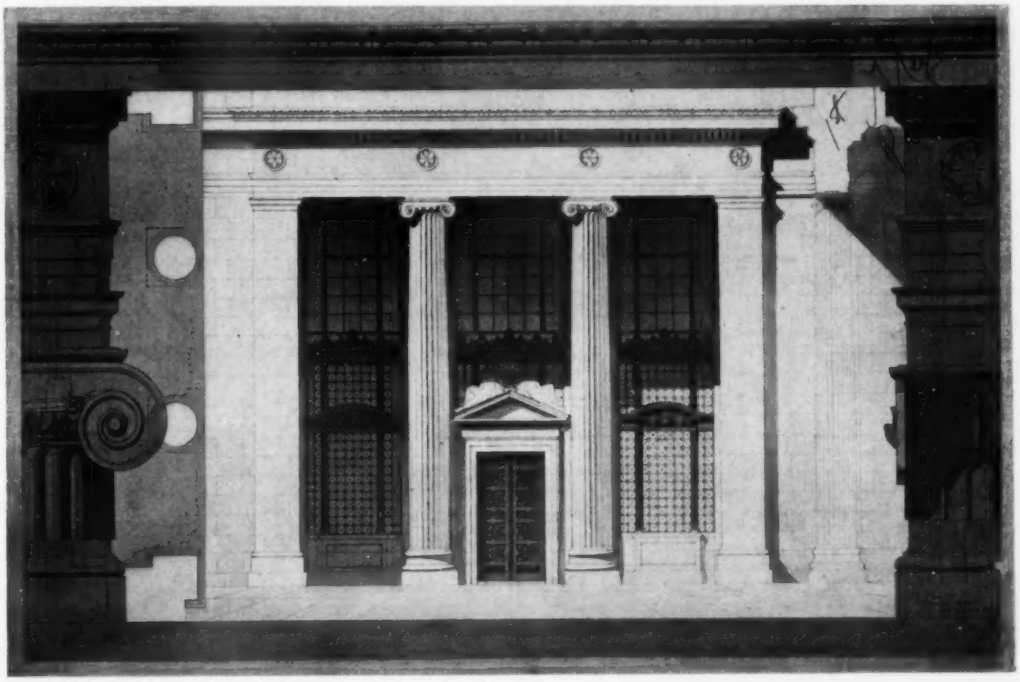
CLASS "A" & "B" ARCHAEOLOGY—V PROJET—"A SMALL VILLA IN THE STYLE OF PALLADIO."

NUMBER OF DRAWINGS SUBMITTED:—3.

AWARDS:—

THIRD MEDAL:—R. T. Morenus, Columbia Univ.

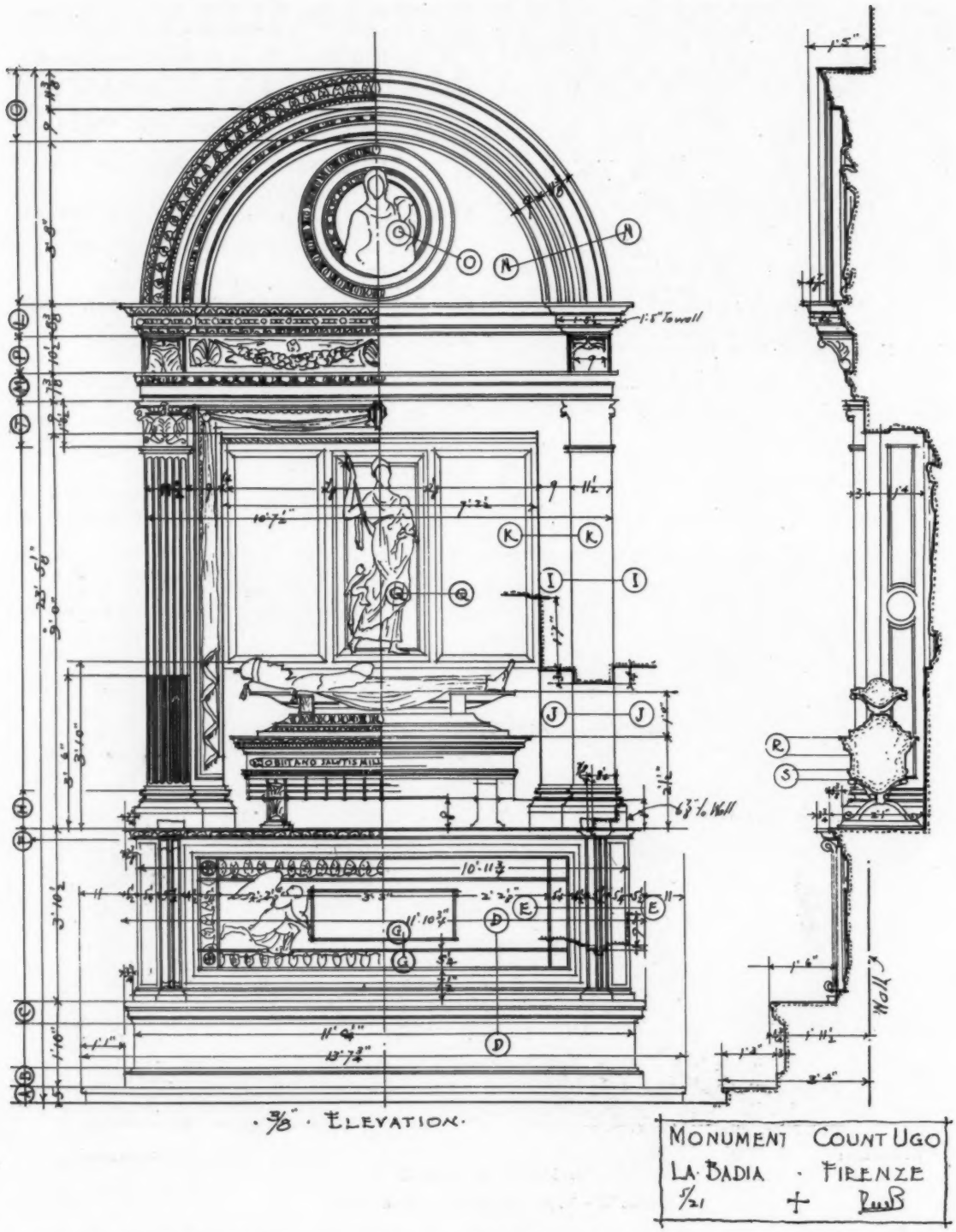
MENTION:—C. F. Fuller and I. Tron, Columbia Univ.



H. S. Torbett — Carnegie Institute of Technology

1st MENTION PLACED

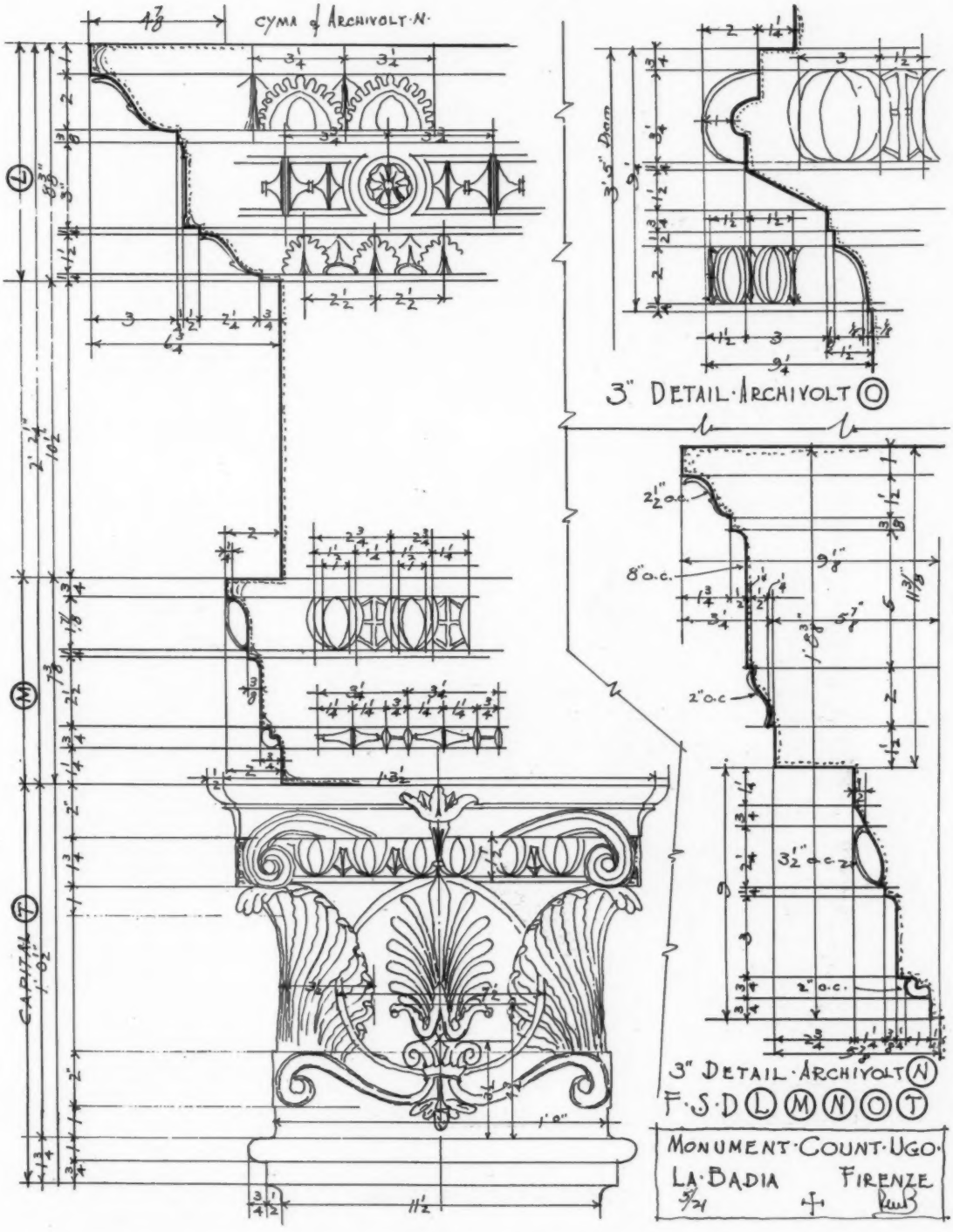
Class "B"—V. Analytique—A two-storied Portico



MEASURED AND DRAWN BY R. M. BLACKALL, 35TH HOLDER, ROTCH TRAVELING SCHOLARSHIP

(*See also frontispiece*)

THE AMERICAN ARCHITECT, SERIES II.
FRENCH AND ITALIAN DETAILS

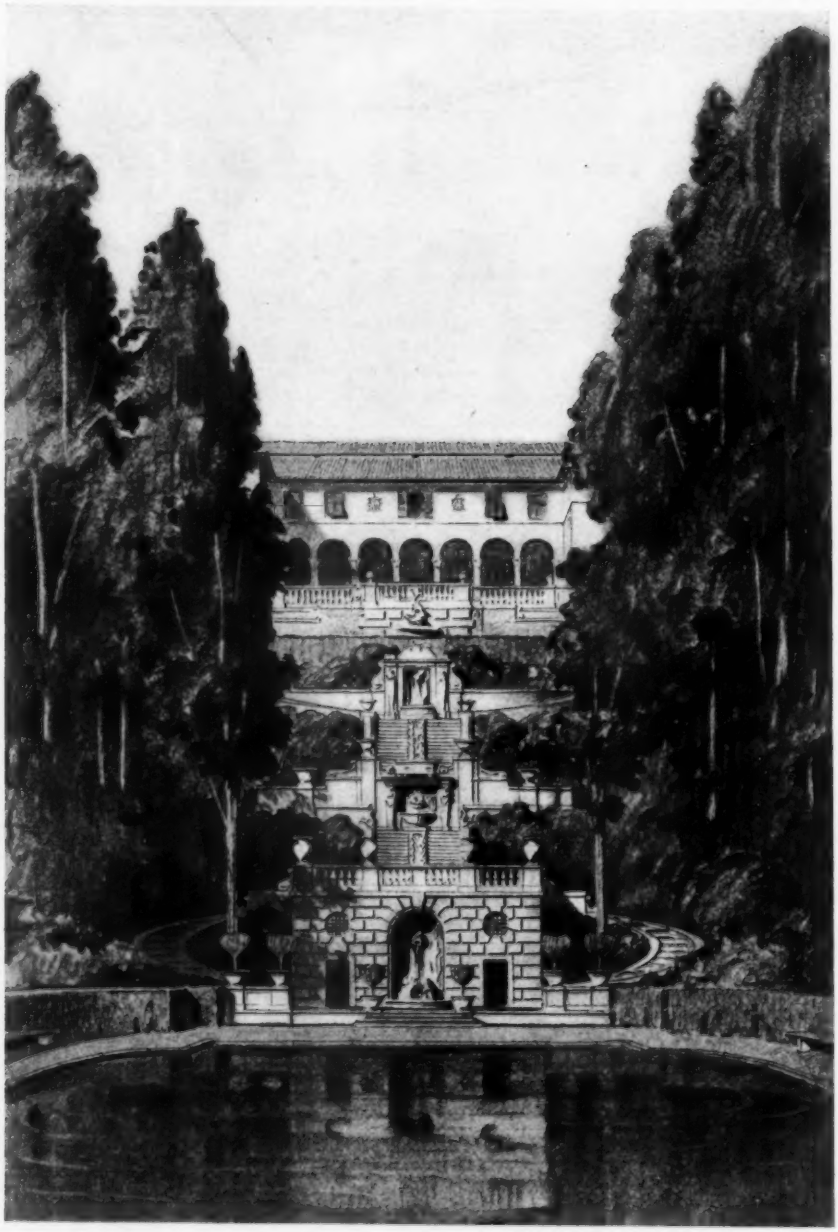


MEASURED AND DRAWN BY R. M. BLACKALL, 35TH HOLDER, ROTCH TRAVELING SCHOLARSHIP

(See also frontispiece)

THE AMERICAN ARCHITECT, SERIES II.
FRENCH AND ITALIAN DETAILS

XUM



SKETCH FROM THE OFFICE OF
CHARLES A. PLATT, ARCHITECT

·EDITORIAL·COMMENT·

THE MICHIGAN STATE SOCIETY IS the latest of these efficient state organizations to demonstrate usefulness and the energetic and progressive manner in which well organized State societies will function.

The Michigan Society has organized and is conducting in a high school at Detroit, a class of men ranging in age from 18 to 55 years, composed of contractors, superintendents, foremen and employees of fifteen building trades. Sessions are held two evenings each week.

The attendance at these classes taxes the capacity of two grade rooms, and many applicants have been refused because of lack of class room.

The course of study has been planned to show the correlation of the different trades, and to impart such knowledge as will facilitate the course of construction and add to the completeness of the finished building.

A similar movement has been successful in Philadelphia, and the instant acceptance of the idea in Detroit shows conclusively the practicability of such efforts and the good results that accrue.

If for no other reason than to accomplish such desirable ends as are being secured in Michigan, it would be logical to advocate the formation and active working of societies in every state. As has been pointed out many times in these pages, the advocacy of State societies is in no sense treason to the Institute. There are well organized Chapters of the Institute in Michigan, New York and Illinois, just as there are equally well organized State societies. The national aspects of practice as referring in part to local issues can be and are the proper fields for the Institute. But purely local, or state problems can be and are better handled by State societies which directly approach their problems, than by the dilatory or slower processes of the Institute.

Why not, in view of the evidence, have more State societies?

* * *

SPECIFICATION AND SPECIFIC HAVE the same root form. No one appears to be in doubt as to the meaning of specific, yet how many specification writers fail to link the two words. They write specifications which in many places fall far short of being specific. Definite is a useful synonym for specific and the expression "definite specification" avoids the alliteration resulting from the use of the expression "specific specification," occasionally encountered in lawyers' briefs. To be definite should be the outstanding quality of specifications. Specifications call for things to be done in a definite manner or to perform a definite service. The coupling of the word definite with the word specification is a departure from strong English, for specification means definiteness of statement.

To be specific or definite implies the existence of a standard. When a specification writer calls for a certain material, process or piece of equipment followed by "or equal" the element of uncertainty as to what may be a proper standard makes the specification vague. Not being specific, it ceases to be a specification and becomes a general description. Doubts can arise as to the ability or uprightness of the man on whom rests the responsibility of defining "or equal." They often arise and are frequently given vocal expression. The only thing to do is to remember that to be definite is to demand something specific. He who does this becomes in time respected by artizans and is sought for by clients. A definite statement is not always arbitrary but the weariness of mind brought on by insistent demands for a definition of "or equal" frequently results in arbitrary decisions.

A wise man once said "Only incompetent men curse their task." A little reflection on this remark may lead to more care in the preparation of specifications, for a competent specification writer will obtain for his client a maximum of values with a minimum expenditure of energy. His employment will be justified by the results obtained and how he obtains them. Friction is expensive and leaves lasting effects. Specifications have for their indirect purpose the reduction of friction in personal relations to an irreducible minimum. They accomplish their purpose in proportion to definiteness of statement and firmness in execution of the clause they contain.

* * *

ENGLAND'S HOUSING PROBLEMS, AS acute as our own, do not appear to be any nearer to a practical solution. In this country we have evolved no national scheme, no plan by which we might propose to take steps that would result in building. This is perhaps fortunate for us. The building industry is able to take care of its own business and needs no political interference. But, it is just such interference that has resulted in England's housing perplexities. The intricately devised schemes, all economically unsound, have now been cast aside. Meantime little, if any, progress has been made in England. It is probable that the working out of these matters may be left to those who should logically undertake it, and that once the housing problems are freed of their political features, the situation will steadily and safely improve.

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The dearly bought experience of the English building industry may very well serve as an example of how not to do it, to our own industry.

The only safe way is to build houses as a paying investment and this can only be done by private enterprise. National control of civil industry is a restraint that it is not believed the people of this country would patiently endure.

Political parties may show their usefulness by favoring the elimination of these conditions of labor and capital that are the real retardants. When these are removed or their influence lessened, the splendid organization of the building industry will at once function in the most efficient manner.

* * *

ACKNOWLEDGEMENT IS MADE OF A lengthy communication from the League of New York Artists, protesting against the disrespect shown by city contractors of subway operations to monuments located along the line of subway work. This letter directs attention to numerous instances where monuments have suffered from carelessness or neglect to give proper protection.

Specific attention is directed to the equestrian statue of Washington, located facing Fourteenth Street on the South side of Union Square. Probably no finer statue of Washington has been anywhere erected in this country. Citizens for generations have prized it as one of the City's finest art treasures. For many months it has been surrounded by piles of construction debris, and treated with most utter indifference. The rubbish is now being cleared and it is disclosed that the fine granite pedestal is smeared with pitch, and otherwise disfigured and stained. Further it is claimed that the blasting carried on for so long a period has disturbed the security of the statue's foundation and that there may result serious injury from settlement.

One thing is certain, that our public statues should be saved so serious a menace. The Municipal Art Society might with propriety start an investigation to fix the responsibility for any damage to this and other works of art along the line of subway construction work.

* * *

ERNEST WILBY, LONG TIME ASSOCIated in practice with Albert Kahn, at Detroit, Michigan, will teach an advanced class in design-problems at the Architectural College of the University of Michigan during the second semester of the present year, which began on February 13.

The policy inaugurated at Ann Arbor to use all the academic instruction in design, construction and drawings as preparatory to a senior and graduate course in architecture is decidedly a step in the right direction.

It is proposed to design a building in a thoroughgoing manner, giving to its problems much more consideration of the professional view than is now possible in the usual undergraduate work. While an architectural school cannot be made a substitute for an architect's office, it is the intention at Ann Arbor to provide instruction in the co-ordination of the various parts of the work and in those aspects of design which a graduate usually obtains at the hands of a first class head draftsman or the employing architect himself, if, fortunately, he at once takes employment in a high class office.

Mr. Wilby's course of instruction will undoubtedly achieve the most practical and efficient results, and the University of Michigan may be congratulated in the inauguration of a departure which will undoubtedly lead to other and equally radical and commendable changes in architectural educational courses.

NOTES ON THE ILLUSTRATIONS

TWO HOUSES AT NORTH PLAINFIELD, N. J.

JOHN T. SIMPSON, Architect; BROWN ROLSTON, Associate

THE designing of two houses to be built side by side is always an interesting problem, particularly when the circumstances permit them to be designed at the same time and more or less as a unit. Such was the problem presented by the two houses shown elsewhere in this issue. They were designed, placed and erected with a view to harmonizing with each other and with their surroundings. The general type selected was the so-called "Colonial,"—one house in the Dutch phase, the other in the New England phase. They were placed approximately 150 feet from the road, which at this point turns on a sharp curve, so that while they are a uniform distance from the street the houses are staggered and therefore do not give the monotonous, military effect so frequently seen in surburban towns. The setting is peculiarly fortunate. The properties are deep, running back perhaps 350 feet from the road to a steep wooded bank at the base of which a stream runs through a forest of primeval trees, giving a quick transition from the formality of the well kept lawns and gardens to the wild freedom of the woods. A few large trees are well placed near the houses, lending that settled appearance so much to be desired for houses of this type. Across the front of both places a low stone wall is built through which the walks and driveways pass between white picket gates.

The main problems in the design of the McGee house were, first, to keep the house in character and at the same time avoid sloping ceilings in the second floor; and, second, the creation of a sun porch and sleeping porch, usually so fatal to any Colonial house. The first difficulty was overcome by carrying the hood across the front of the house below the second story windows and putting a gambrelled roof on the extension; thus without clipping the corners of any of the rooms a general gambrelled effect is achieved. It was, of course, not possible nor indeed desirable to disguise the purpose of the sun porch entirely but a compromise was reached which neither misrepresents the real object of the interior nor violates the general tradition of the exterior treatment. The sun porch and sleeping porch were placed in an extension that conforms in general design to the kitchen extensions of an earlier day. The windows of the sun porch match in size and shape the other windows of the first floor and are so spaced that each group is flanked by shutters which gives the solidity necessary to kill that all-glass effect so much to be avoided in Colonial design. The sleeping porch offered the greatest problem of all but was satisfactorily solved by putting a low dormer in the front with two small casement windows high up, a group of three windows at the side flanked by shutters and at the rear two double casement windows dormered at an equal height to the front dormer, giving a symmetrical profile but cut down almost to the floor. The interior is left open to the peak giving an unusual and pleasing effect of broken ceiling lines. A semi-circular ventilating louvre at the peak adds charm to the exterior and serves a practical purpose at the same time. Bed space is allowed under the high windows at the front so that while no draught blows directly on the beds, complete ventilation is achieved. The walls are sand plastered in grey and the floor drops down one step below the bedroom floor, adding to the quaintness of the interior.

In plan the house follows convention to a large degree but one or two diversions are worthy of note. From the paved terrace on the garden side of the house a door leads to a rear hall which serves as a gradual transition between the main part of the house and the service portion. The objects of this hall are to cut off the first floor lavatory and the entrance to the cellar stairs from the main part of the house and still give access to them without going through the service portion, and also to allow the owners to reach their rooms on the second floor without going through either the main portion of the house or the service portion. A large closet where all the outdoor things may be kept, opens off this hall. There is a small closet in the pantry for table leaves and other dining room extras, and a mop closet in the kitchen separate from the larder. The arrangement of rear entry and larder in a small one story extension keeps the refrigerator and stores out of the heat of the kitchen.

The third floor contains one large bedroom and an ample attic.

THE problems of the Howell house were somewhat similar to those of the McGee house except that a study was required on the first floor and two large master chambers and a

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boudoir on the second. The first was attained by shortening the entrance hall and placing the study in the space thus saved. The square hall is distinguished by a graceful curving stair leading to a large open second story hall. The additional space on the second floor was gained by carrying the floor out over the brick-paved piazza at the rear, a practice usually to be avoided but, as the illustrations show, that top-heavy look so frequent when this expedient is used, has been avoided by the use of large solid piers faced with pilasters. The sun porch was treated on the same principles as that of the McGee house. As no sleeping porch was required this space was utilized for the owner's bath and two large clothes closets. The third floor contains two finished rooms and a large attic.

Both houses are equipped with batteries of warm air generators, and in addition the fireplace in the study of the Howell house has a heater installed which furnishes hot water heat to the owner's bathroom and to Master's chamber No. 1 when a log fire is lighted. This is used in early fall and late spring when the regular heaters are not running.

The exteriors are of long cypress shingles on the sides, with edge grain cypress trim, and Creodipt cypress shingles on the roofs.

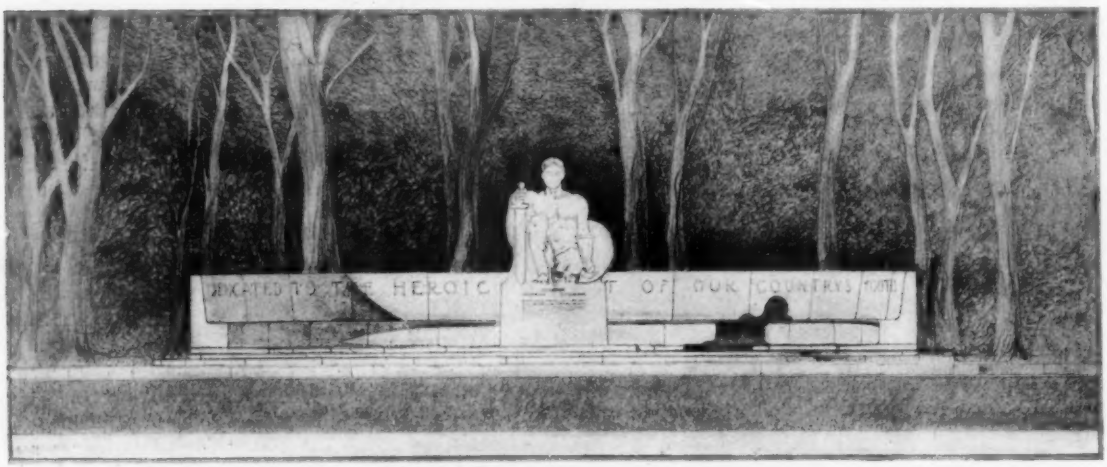
Monument to Count Ugo, Marquis of Tuscany, in the Church of the Badia at Florence, Italy

MINO DA FIESOLE, who lived from 1431 to 1484, excelled in the design of such works as altars, monuments and tombs all of which were purely decorative works. One of his best works is this tomb to Count Ugo. Made of marble and now in excellent preservation, it stands as one of the exquisite bits of purely architectural decoration. It was built in 1481 near the end of Mino da Fiesole's life and is one of his masterpieces.

War Memorial for the City of Barre, Vermont

THIS monumental memorial, the tribute of the citizens of Barre to the soldiers and sailors of Barre, engaged in the World War, is the prize winning design of John Mead Howells, architect.

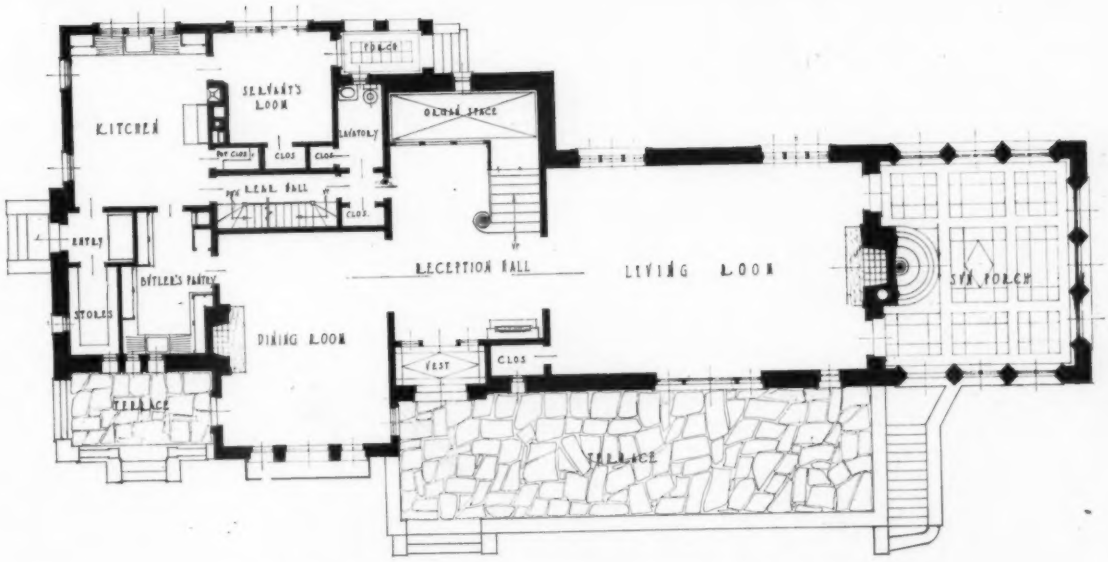
In its completed form the figure will be nine feet high, and will rest on a die which will lift it six feet more. This die, in turn, will rest on a base a foot high. The whole design forms a granite circle fifty feet in diameter, and has been located by the architect at the point of the City Park, in the center of Barre, where the Roosevelt National Highway divides.



Architect's Sketch for War Memorial, Barre, Vermont
John Mead Howells, Architect

HOUSE OF EUGENE A. RIOTTE, ESQ., MANHASSET, L. I., N. Y.

SLEE & BRYSON, ARCHITECTS



HOUSE OF EUGENE A. RIOTTE, ESQ., MANHASSET, L. I., N. Y.

SLEE & BRYSON, ARCHITECTS

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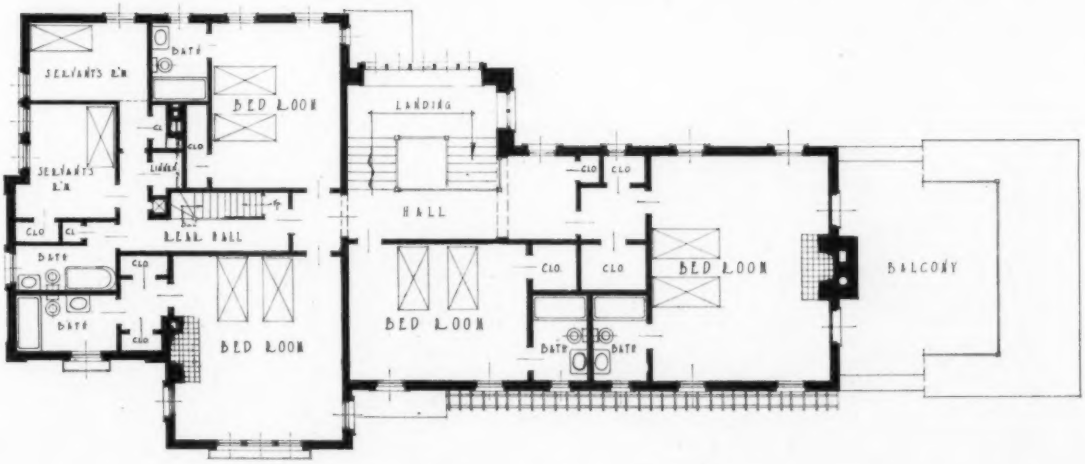

HOUSE OF EUGENE A. RIOTTE, ESQ., MANHASSET, L. I., N. Y.

SLEE & BRYSON, ARCHITECTS

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DINING ROOM

LIVING ROOM

HOUSE OF EUGENE A. RIOTTE, ESQ., MANHASSET, L. I., N. Y.

SLEE & BRYSON, ARCHITECTS

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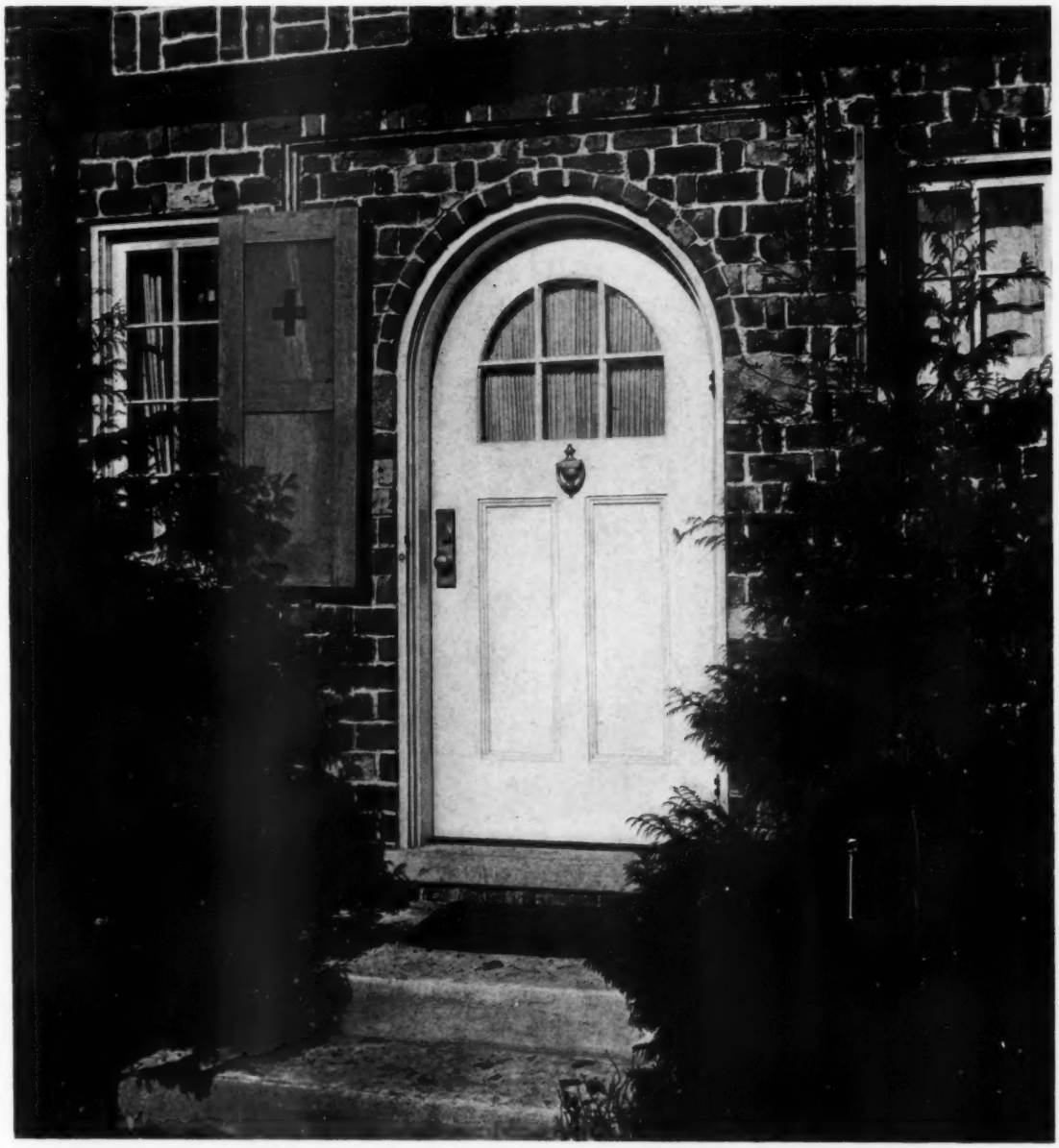
VOL. CXXI, NO. 2388

MARCH 1, 1922

A HOUSE AT RYE, NEW YORK

S. EDSON GAGE, ARCHITECT



DETAIL OF PRINCIPAL ENTRANCE

A HOUSE AT RYE, NEW YORK

S. EDSON GAGE, ARCHITECT

XUM

VOL. CXXI, NO. 2388

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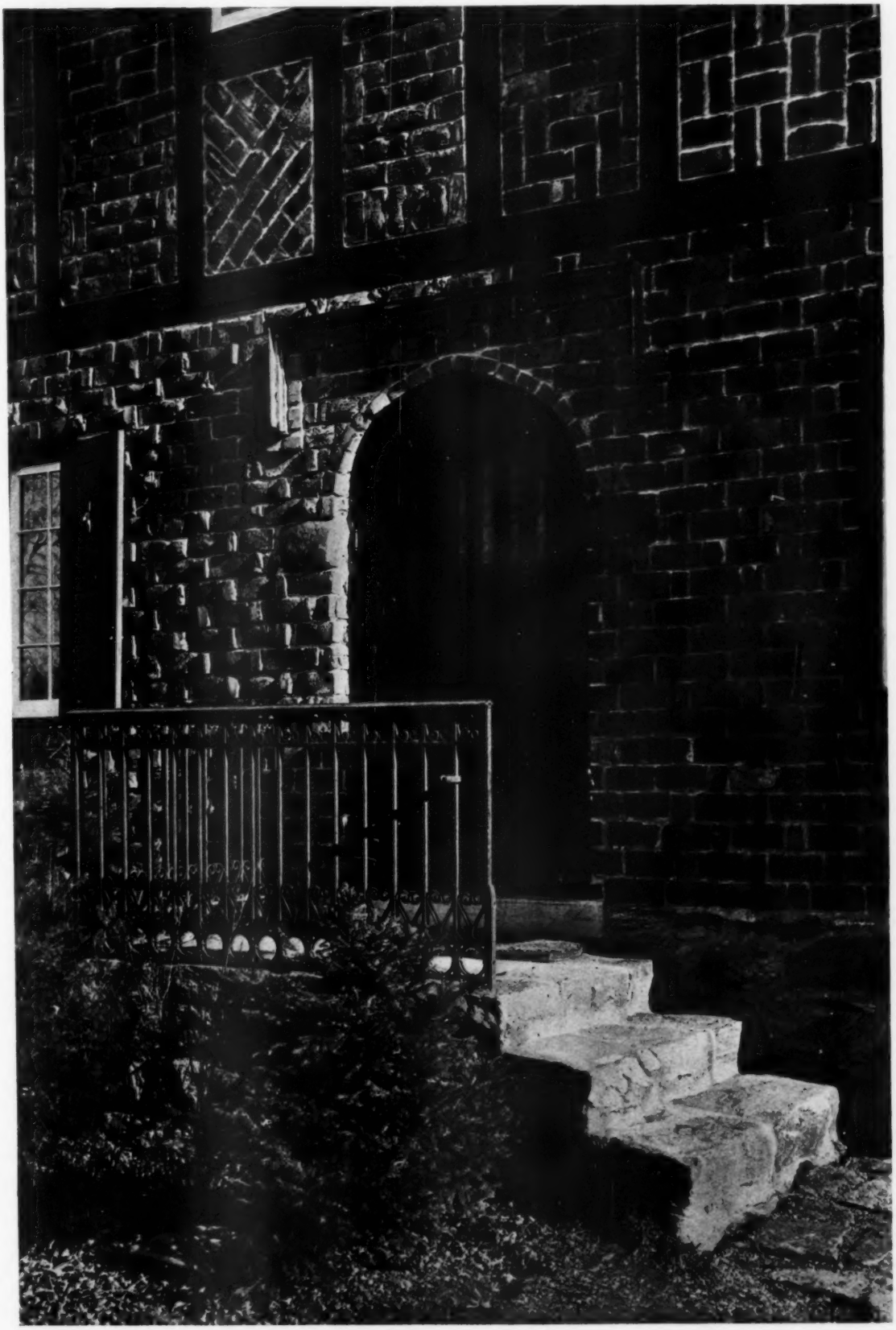

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HOUSE OF FRANK ROLLINS, ESQ., FIELDSTON, N. Y.

DWIGHT JAMES BAUM, ARCHITECT

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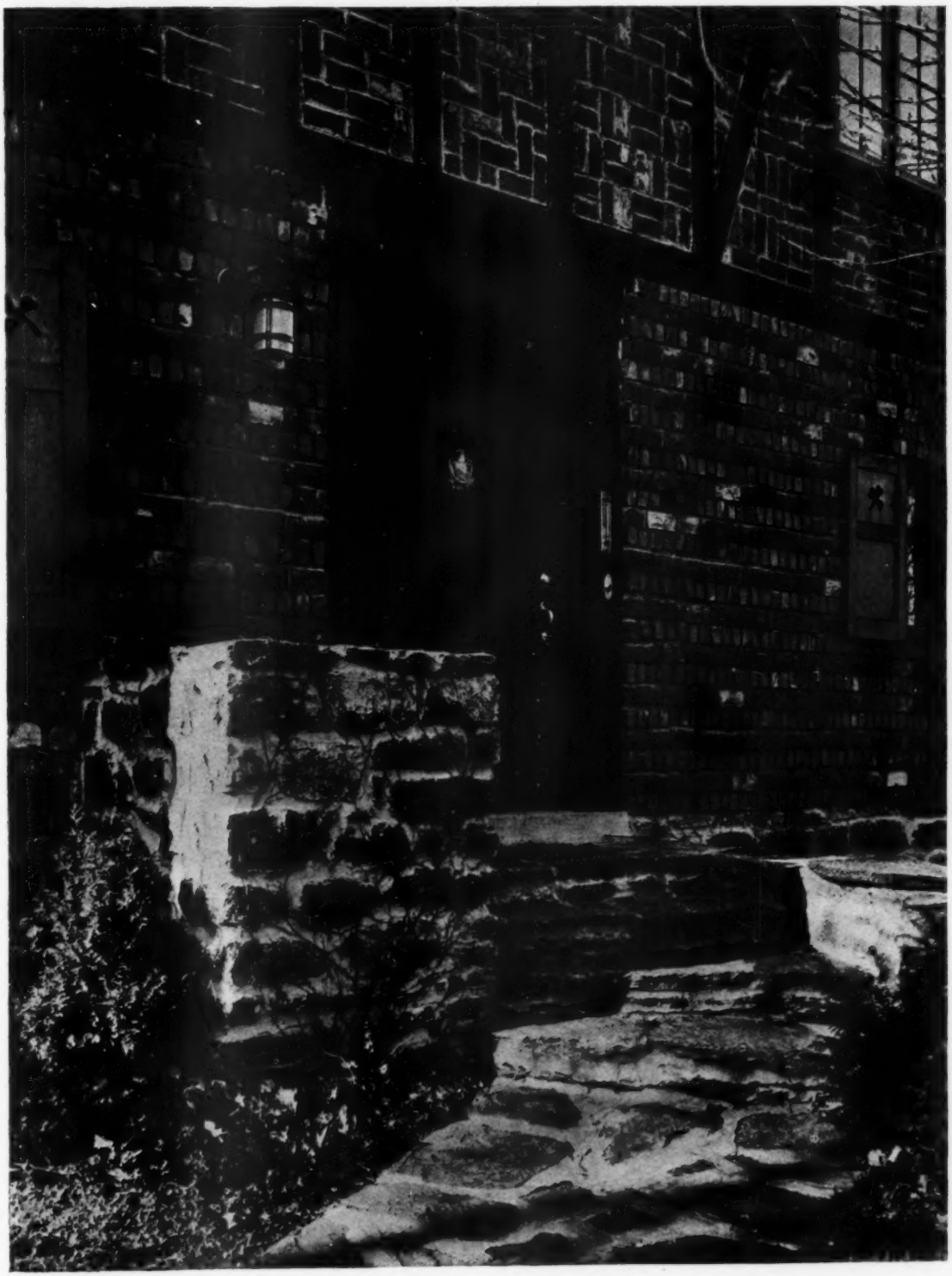
HOUSE OF PAUL BAYNE, ESQ., RYE, N. Y.

S. EDSON GAGE, ARCHITECT



DETAIL OF MAIN ENTRANCE

HOUSE OF PAUL BAYNE, ESQ., RYE, N. Y.

S. EDSON GAGE, ARCHITECT

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AN APARTMENT HOUSE ON PARK AVENUE, NEW YORK

WM. LAWRENCE BOTTOMLEY, ARCHITECT

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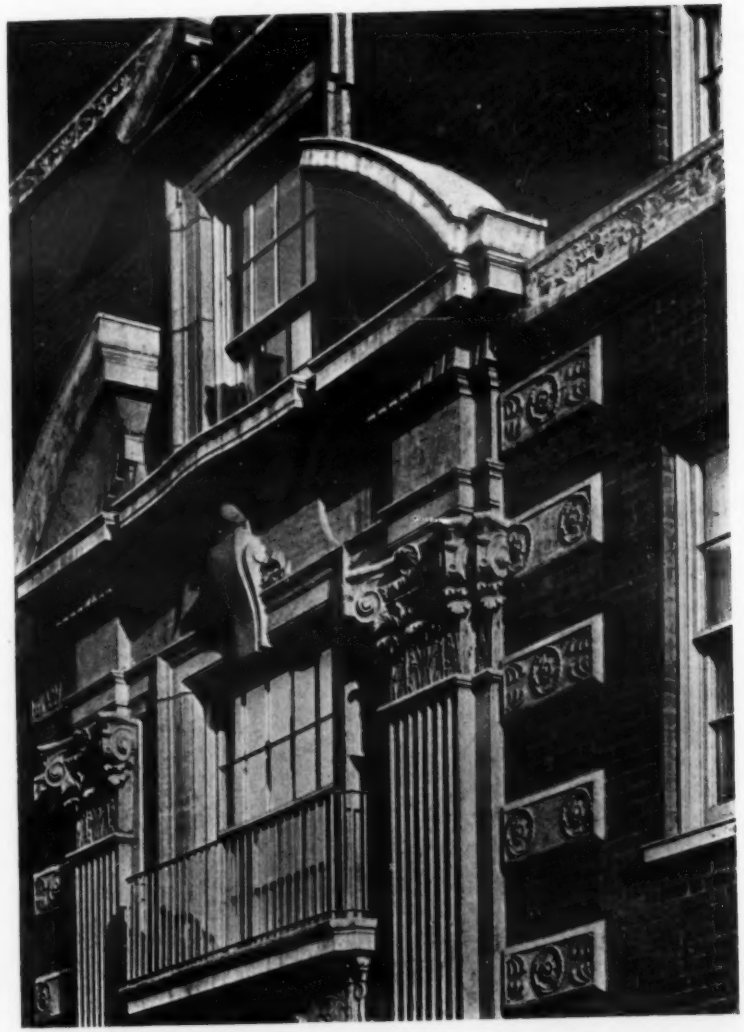

DETAILS OF MAIN ENTRANCE

AN APARTMENT HOUSE ON PARK AVENUE, NEW YORK

WM. LAWRENCE BOTTOMLEY, ARCHITECT

HOUSE OF H. L. McGEE, ESQ., NORTH PLAINFIELD, N. J.
JOHN T. SIMPSON, ARCHITECT; BROWN ROLSTON, ASSOCIATE

(*For description see page* 177, *for plans page* 180)

HOUSE OF J. H. HOWELL, ESQ., NORTH PLAINFIELD, N. J.

JOHN T. SIMPSON, ARCHITECT; BROWN ROLSTON, ASSOCIATE

(For description see page 177, for plans, page 179)

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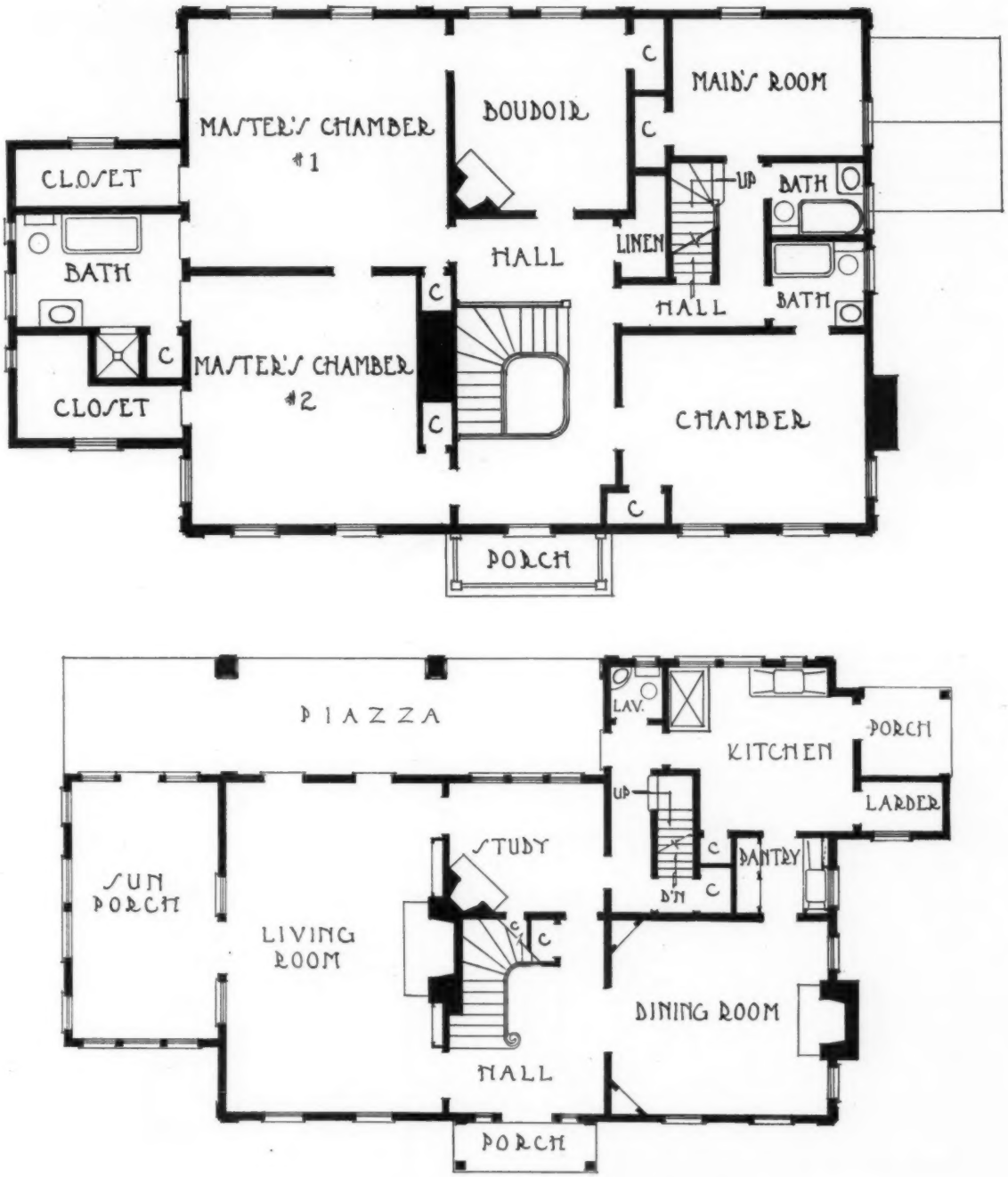
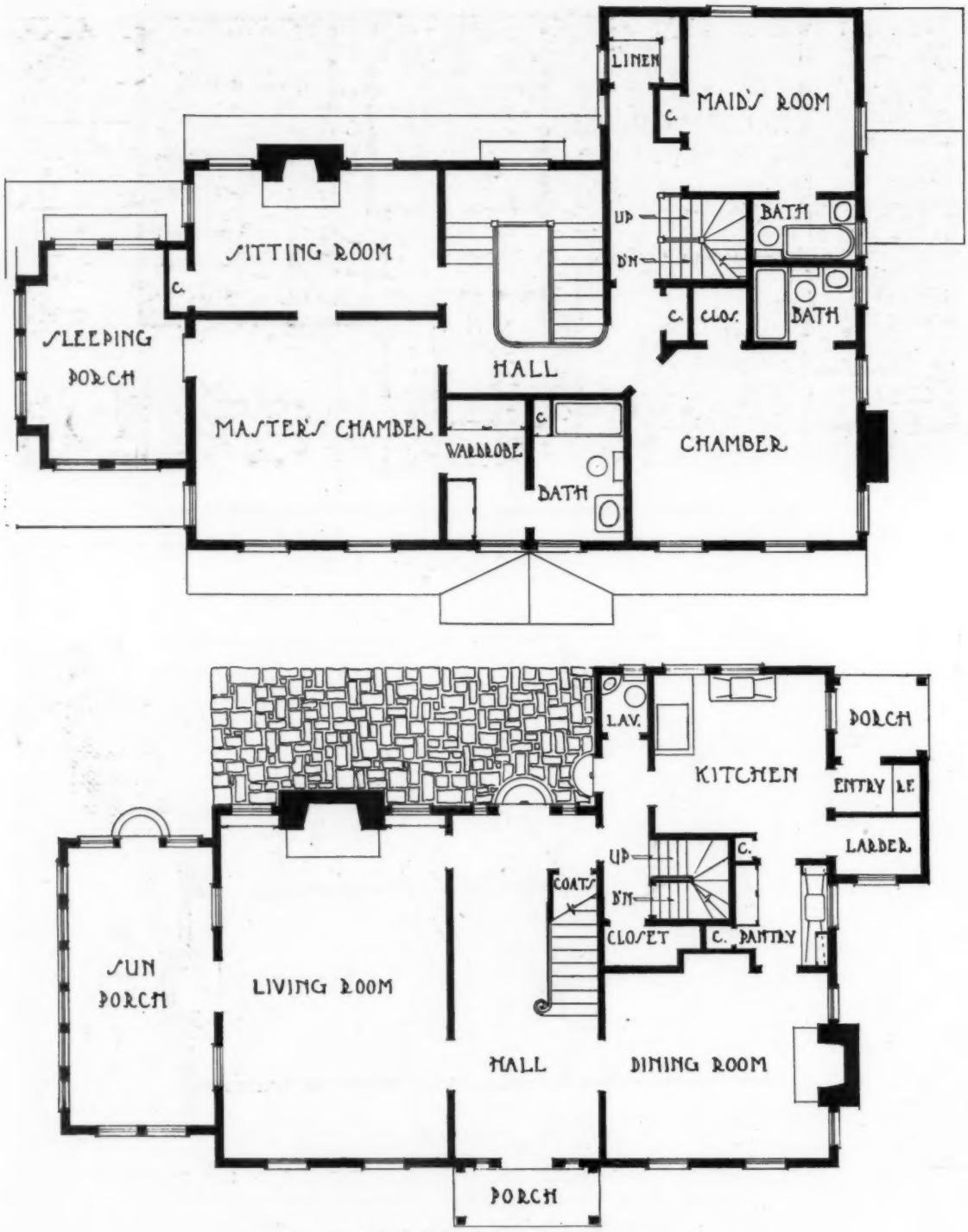


HOUSE OF J. H. HOWELL, ESQ., NORTH PLAINFIELD, N. J.

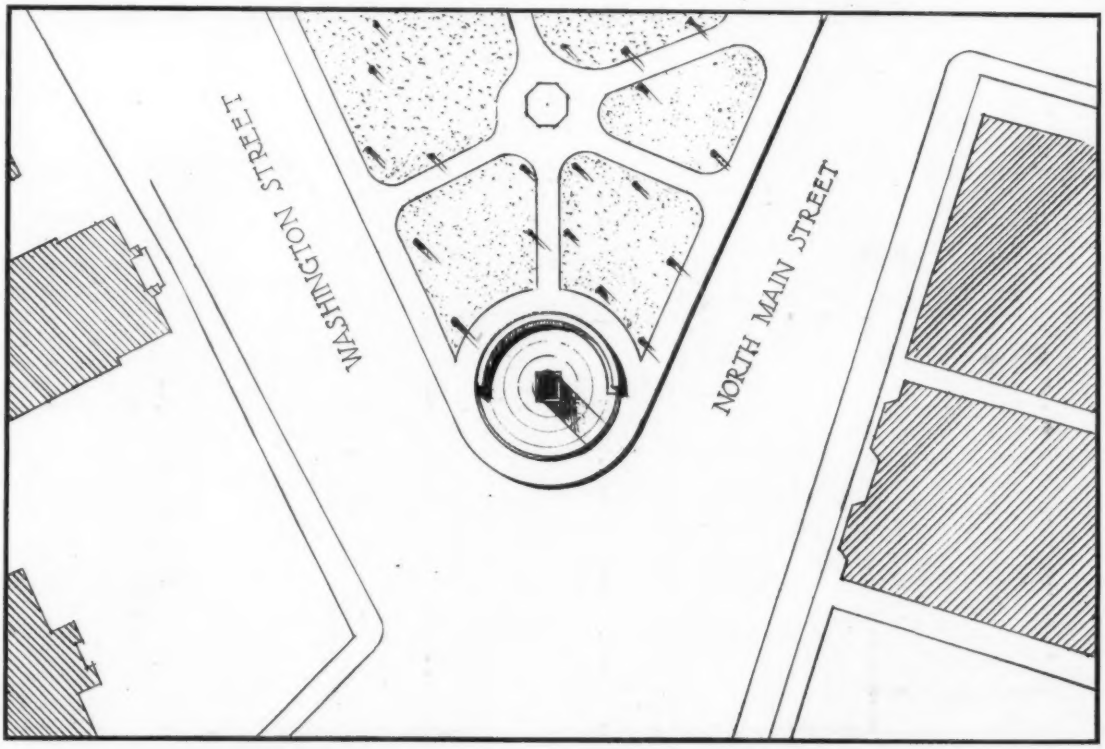
JOHN T. SIMPSON, ARCHITECT; BROWN ROLSTON, ASSOCIATE

(For exterior view see plate section, for description page 177)



HOUSE OF H. L. McGEE, ESQ., NORTH PLAINFIELD, N. J.
JOHN T. SIMPSON, ARCHITECT; BROWN ROLSTON, ASSOCIATE

(For exterior view see plate section, for description page 177)



SOLDIERS AND SAILORS MEMORIAL, BARRE, VERMONT

JOHN MEAD HOWELLS, ARCHITECT

(See page 178 for description)

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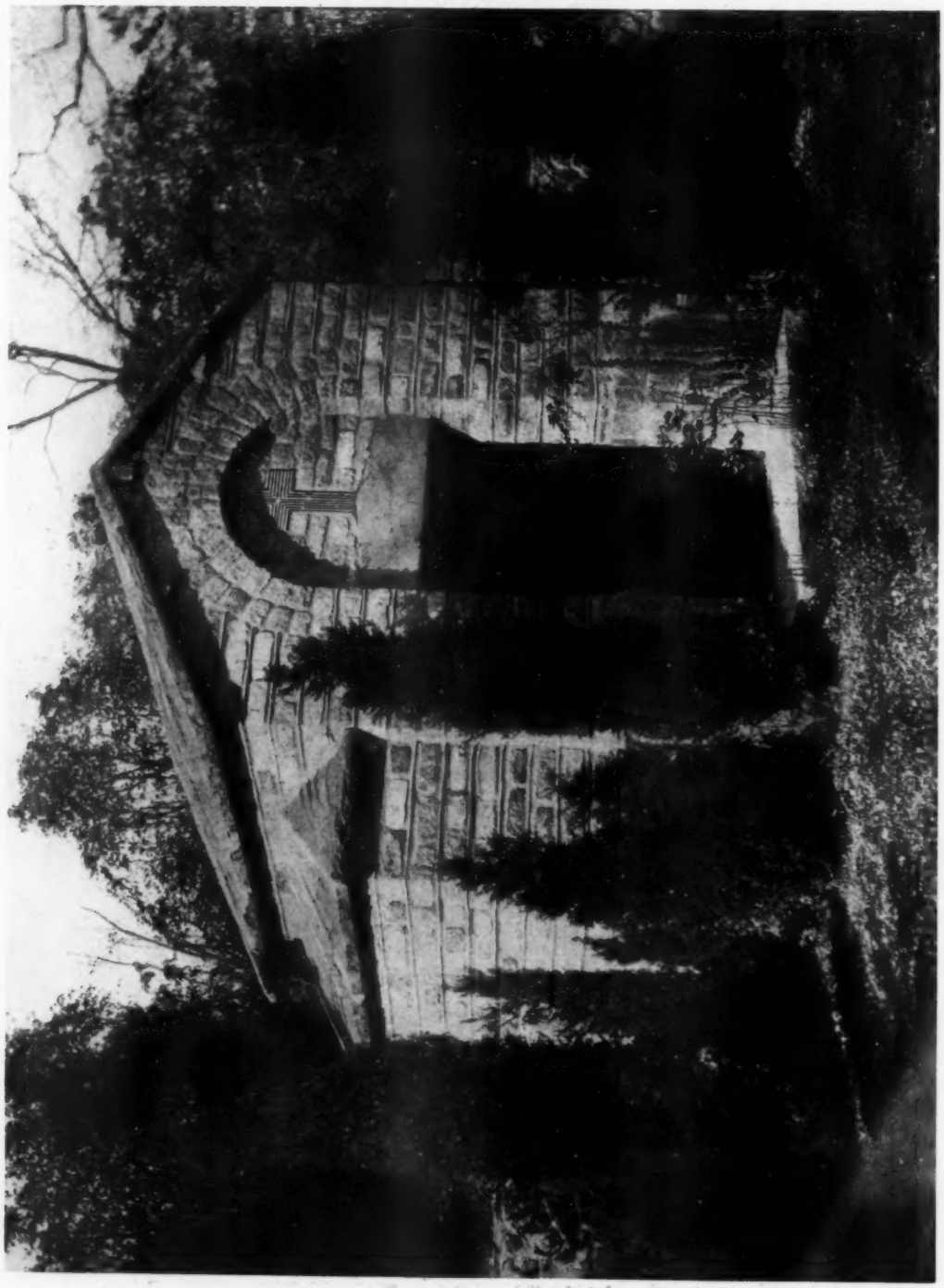
MAUSOLEUM FOR J. HARPER POOR ESTATE, WOODLAWN, NEW YORK

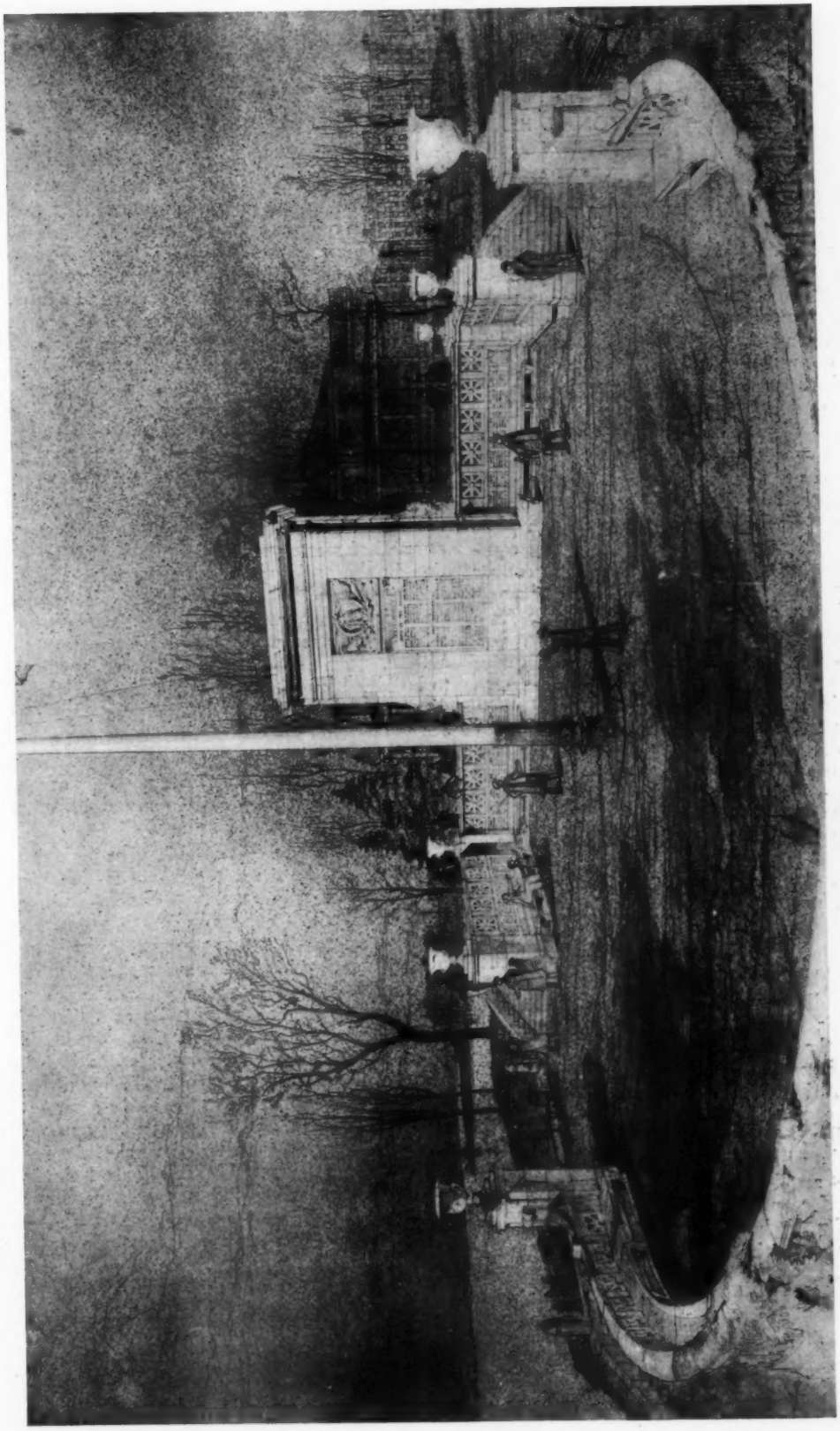
JOHN MEAD HOWELLS, ARCHITECT

FOUNDER'S MEMORIAL, BELOIT, WIS.
JOHN MEAD HOWELLS, ARCHITECT

XUM



MAUSOLEUM ON A LONG ISLAND ESTATE
JOHN MEAD HOWELLS, ARCHITECT



SKETCH FOR PROPOSED YORKVILLE WAR MEMORIAL,
CARL SCHURTZ PARK, NEW YORK CITY
JOHN MEAD HOWELLS, ARCHITECT

XUM

LEGAL DEPARTMENT

Conducted by

CLINTON H. BLAKE, Jr., of the New York Bar

Discharge of the Architect—His Right to Compensation and Damages

THERE seems to be a feeling on the part of many people that a client can discharge an architect at any time, at his pleasure, and that, if he does this, his only obligation, under such circumstances, will be to pay the architect the proportionate amount of his compensation which has accrued up to that time.

In the absence of an agreement providing otherwise the law does not provide any such rule of damages:—

The employment of the architect is, it is true, a contract of personal employment. That is, the employment is based on the personality of the architect, and in this respect differs from a purely business agreement involving no personal equation, such for instance as an agreement to convey real property. If a man agrees to convey property to you and refuses to do so you can secure from a court of equity an order compelling him to perform his contract. If however, a man employs you as an architect or as a lawyer, or doctor, to do a certain piece of work, the court will not compel him to continue to employ you or enjoin him from discharging you if he wishes to do so. This is because the contract is a personal one and depends upon his confidence in you as an individual and in the value of your services as such.

While all this is true, it by no means follows that if the architect is discharged without just cause, his only right is to receive the proportionate amount due him at the time the discharge is effective. His employer can discharge him but he cannot, in the absence of an agreement to the effect, limit his right to compensation to any such extent. He discharges him at his peril and can be held liable for the damages sustained by the architect as the natural result of his act.

If an architect be employed to prepare plans and specifications for, and to superintend the erection of, a given building under an agreement that he shall receive as compensation a specified commission based on the total cost of the job, the owner cannot avoid his obligation to pay the architect his full fee on the total cost of the building as erected, by discharging him before the work is finished and continuing it to completion without him.

In the case of an ordinary employee, the employer, where the employee is discharged and sues for services on the basis of the full term of the contract of employment, is entitled to set off against the account, which would have become due under the contract any sums received by the employee from any other employment, which he has had during the period commencing at the date of discharge and ending at the time the original contract of employment terminated. If, for instance, a bookkeeper were hired for one year beginning January 1st, and was discharged improperly July 1st, and brought suit for the six months' salary from July 1st to December 31st, but in the meantime accepted a new employment, the employer could deduct from the sum claimed by the bookkeeper the amount received by him during the period from July 1st, to December 31st.

Theoretically, this same rule would apply in the case of the employment of an architect. As a practical matter, however, it has no real application in the ordinary case for the reason that the architect, handling many different matters, is in an entirely different class from an employee such as a bookkeeper, who works for one employer at a time. The fact that the architect is employed to build a house for Mr. Smith after he has been discharged by Mr. Jones does not entitle Mr. Jones to set off the amount received by the architect from Smith, for the simple reason that the architect would have been able with his organization to handle the Smith job in any event, whether he had been discharged or not.

Somewhat analogous to this question of compensation, in the event of discharge, is a misunderstanding with respect to the Institute schedules, with which one sometimes has to contend. Noting the provision that payments may be made in instalments, a client will assume that the provision that 1/5 of the fee is payable when the preliminary sketches are submitted means that if the employment of the architect is stopped at that point the 1/5 payment is intended to be a full measure of the sum payable to the architect for the work done up to that point. As a matter of fact, of course, this is not necessarily true. The instalment payment under the schedule is not meant to be a payment in full for all the work done up to that time, but merely a payment on account of the total fee. The times and proportions at which the instalments are to be paid are merely adopted for convenience, on the theory that they represent as nearly as practicable the amounts which become due at the various stages of the work. It does not follow that these instalment payments represent accurately in any given case, the actual value of the work done up to the

respective points at which the instalments become payable. The contract is an entire contract covering the building operation as a whole. Instalment payments are provided for, but this does not mean that the owner, having employed the architect to do the particular piece of work in hand can refuse to let him proceed when the first 1/5 instalment has become payable and by then paying him the exact amount of that instalment necessarily square the account at that point.

Of course, with respect to these payments, as with respect to the discharge of the architect, a special agreement, if it exists, direct or implied, may change the situation, and where such an agreement is definitely shown to exist, its terms will govern and bind those who are parties to it. The provision in the Institute schedule of charges that where the work is abandoned or suspended, the fee for preliminary studies shall be in accordance with the character and magnitude of the work, is indicative of the fact that the payment usually made upon the completion of these studies is not taken to be the exact gauge of the value of the work done.

To be on the safe side, the architect must always remember that each case is decided on the particular facts involved in it, and the question whether or not, in a given case, he can hold an owner liable for full compensation, in case of his discharge, and what, in general, his rights are under such conditions, will depend on the particular facts in the case and any agreements existing between the parties and the dealings which they have had together.

LEGAL DECISIONS

WHERE an architect is employed to prepare plans and specifications and to superintend the erection of a building and is prevented from performing his services by the employer and through no breach of the contract on his part he may recover from the employer as damages the full amount of his contract fee as though he had continued in charge of the building operation.

Graf. v. Laev, 120 *Wisc.* 177.

WHERE the owner discharges the architect before the completion of the building, the architect is entitled to recover as damages the amount which would have been paid to him for architectural services under his agreement with the owner if the work had been completed.

Kilroe v. Rutherford, 56 *N. J. Law* 23.

THE damages which an architect discharged by an owner while the work is in progress may recover are the agreed value of his services based on the contract price.

Kitchel v. Crossley 101 *Atlantic* 179.

THE schedule of charges of the American Institute of Architects will be received as evidence of the reasonable rate of compensation for an architect's services in the absence of a special agreement covering them.

Gilman v. Stevens, 54 *Howard's Practice* 197.

THE schedule of charges of a local chapter of the Institute will not, however, necessarily be proper evidence of the value of an architect's services in another state.

Mason v. U. S., 4 *Court of Claims* 495.

WHERE an architect makes a contract to furnish plans and superintend the construction for an agreed price and later the contract is superseded by a second agreement for plans for a structure of greater cost, no price for the architect's services being fixed, the architect may sue to recover the reasonable value of his services under the second agreement, and may prove the reasonable value of the plans and also of any additional services rendered by him.

Marcotte v. Beaupre, 15 *Minn.* 152.

WHERE, at the request of the owner, the plans are changed, the architect may recover for the work incident to making the changes, whether this is done after the bids were received or after the contract was let.

Johnson v. O'Neill, 181 *Michigan* 326.

WHERE an architect agreed to make plans and specifications and to superintend the construction of a building at an agreed price and the owner, after accepting the plans and specifications, abandoned the original plans and ordered new plans to be prepared for a different structure, and the architect prepared these, he may recover for them as extras.

Fitzgerald v. Walsh, 107 *Wis.* 92.

NOTICE of an intention to charge extra compensation for extra drawings need not be given.

Smith v. Bruyere, 152 *Southwestern* 813.

WHERE a contract between architect and owner is under seal and does not provide for extra work on the architect's part and the owner causes extra work to be done, the architect may recover for it at the contract rate.

Harrison v. McLaughlin, 108 *Maryland* 427.

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DEPARTMENT OF ARCHITECTURAL ENGINEERING

ELECTRICITY IN THE HOUSE

The first of a series of articles fully descriptive of the latest phases of electrical service in the house and the accessories that make for utility and convenience

1—THE GENERAL PROBLEM

BY ARTHUR WILLIAMS

EXCEPT for the type of mind which is quite content to do the standardized thing in the standardized way, adequate electric wiring for a modern home is a subject worthy of very considerable study. Furthermore, it is a study peculiarly appropriate to architects, since it unites in itself those diverse elements of the scientific, practical and the beautiful, which are the terms in which a genuine architectural problem must be stated. The architect thinks out in advance, and, through fairly rigid mechanical media, produces certain scientific desirables, certain practical conveniences and artistic effects, for the benefit of a client who probably has no realization of the detailed forethought involved, and only a hazy general notion that he wants the electric wiring "done right."

A "wired" dining room table, where the wiring is practically invisible, and where the table was not cut into at all in the wiring process

The architect's problem is not made the more simple by the fact that the general wiring procedure does not differ essentially now from what it was when electricity was used for lighting only, and then only at a few definite unchangeable points in connection with a rigid unmovable fixture. In other words, wiring is still inserted at a fairly early stage of building construction, pulled within partitions and otherwise treated after the manner of piping, as if its chief function were to convey illuminating gas to a central chandelier. Yet, in usage, modern people demand an enormous amount of electrical flexibility; not only does the present day expect illumination at any point that the fancy or decorative scheme may suggest, but also it requires that illumination be forthcoming with absolute convenience. Besides lighting, there is the entire new field of the domestic use of electricity, for cooking, for grinding, for cleaning, for washing, for ironing, for heating, and so forth and so on, almost ad infinitum.

In fact, the demands made upon electric wiring are so numerous and varied that one wonders if the day is not near, when some bold spirit will scrap the entire general procedure for household use, and develop a radically new and thoroughly domestic system of wiring, using as a source of supply, an armored electric cable concealed in the baseboard or picture moulding, to which in some fashion, ready access may be had at any desirable point, for any particular use.

That this is not a wild prophecy is indicated by the fact that one firm is already manufacturing a hollow, metal, baseboard through which electric cable can readily be pulled.* But until some such scheme can be elaborated and developed, so that ideas on electrical usage can be changed as easily as wall-paper, it remains necessary for the architect to do the advance-thinking on wiring, and in making his building-plans, to include the bones, as it were, of a good workable system of household electricity, so that on completion the

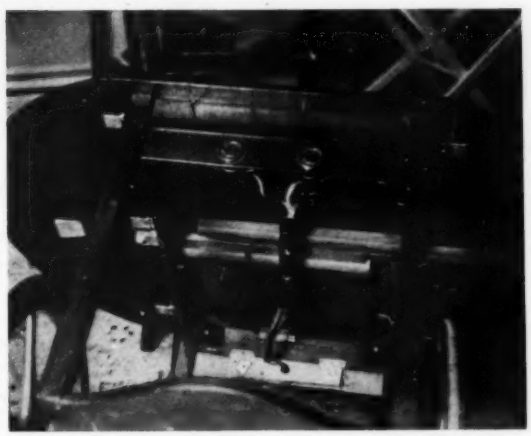
The tea-table today is wired, but the outlets are concealed by the leaves when the table is not in use

client will find all that he vaguely sensed as embodied in the term, "electricity in the home." If this is true for the builder of individual homes, it is also true for the designer of apartments, for the expansive use of electricity is in the air, and if lessees do not find conveniences available, they will provide them for themselves, in ways desired neither by the owners nor the insurance authorities.

The development of electrical usage within the home has followed three general divisions, improvements in convenience, in beauty, and in safety; still it is unsatisfactory to treat the subject along these lines, since a single improvement may involve all three elements. Thus, for instance, in substituting baseboard outlets for long loops of electric wiring strung about a room, one effects greater convenience, infinitely greater sightliness, and at the same time eliminates a certain degree of fire risk. Therefore, putting aside theoretical analysis for the moment, one finds that practically speaking, most of the recent improvements in electric housewiring are related to the problem of bringing the source of supply as near as possible to the point of use. Pursuing this aim plunges one immediately into the world of convenience, switches and outlets, and finally leads to that latest word in electrical ingenuity—wired furniture.

To have the entire electrical bag of tricks to command at the touch of the button, and to have that button placed readily to touch, sums up the entire doctrine of good electric house-wiring. And yet, when this statement has been made, the subject has not been concluded, but rather merely opened for discussion. No one can say where that button is to be placed readily to touch unless he knows for what it is to be used. Thus, in order to be really adequate, any treatment of electric house-wiring must study the house room by room, (as will be done in the series of articles to follow this one) pointing out the probable uses of electricity in that room, and the desirable wiring arrangements for such usage.

In the nature of the case, these articles will proceed along the lines of the most inclusive wiring plan, the wiring plan that would represent ideal conditions of availability of electric current, assuming that there was no question of financing such a wiring layout. Unfortunately, architects



These outlets are concealed by folding boards so that they would not be noticeable were the tea-table without leaves

are not always invited to provide electrical conveniences ad lib. for their clients; oftentimes their problem is to furnish the very best scheme of wiring possible within a set appropriation for the purpose. The unpleasant question therefore arises of deciding which electrical conveniences can be regarded as essential to comfortable living, and which are desirable, but hardly necessary. Again no off-hand answer can be given to this; it is a question of the scale of living. Certain devices, and provisions therefor, may be luxuries in houses maintained informally, and yet become genuine necessities in an establishment designed for elaborate living. Accordingly, the writer has suggested to the author of the series, for which this is the introduction, that in laying out wiring plans, a distinction be made between those provisions which might be considered suitable for the home of moderate price and those that are adapted

*THE AMERICAN ARCHITECT, *October* 26, 1921.

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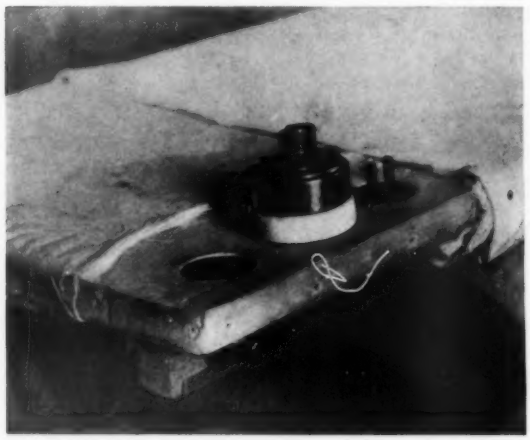
more especially for living on an elaborate scale. It is believed that such a division will make a study of this subject of far more practical value to the readers of this magazine.

A general discussion of present day problems in household electricity would not be complete without some reference to the development of wired furniture, the latest suggestion for arriving at a more intelligent employment of electricity in the home. Electric appliances of all kinds, whether labor-saving devices, such as laundry machines,



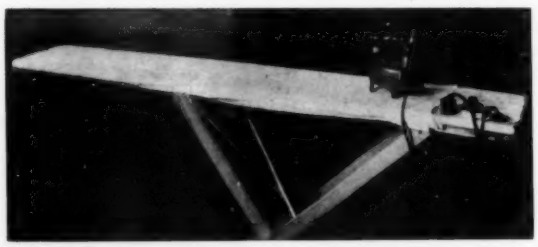
The ironing board has a socket to receive plug from nearby outlet; an outlet for the attachment of the iron and a switch between to insure safety

kitchen equipment, or cleaning implements of different sorts, are now sufficiently familiar to those in touch with the field of house-planning. Electrically wired furniture, however, is a new thing, and it remains to be seen whether it is a passing fad or a genuine development. It is the belief of the writer, that within reasonable limits, wired furniture is not a mere novelty, but another step in the general growth towards a safe, convenient and aesthetic system of house-wiring.

Wired furniture is rather a difficult matter to present graphically, since in the very fact that an article has been well and appropriately wired, its wiring becomes practically invisible, and hence unavailable for photographic representation. And the minute that furniture is wired so as to show conspicuously what has been done and how, it has ceased to be well-wired furniture. Therefore, those models of wired furniture placed on exhibition must be taken for what they are, "display pieces" designed to convey the idea, and to set manufacturers and architects to working out the really desirable wired furniture.

The theory of the thing is this; certain pieces of furniture are so closely involved in the use of electrical appliances, that greater convenience and sightliness is gained by having the wiring outlet brought to that article, and there concealed at some suitable point. In the nature of the case, certain furniture especially invites such treatment; for instance, the dining-room table, the tea-wagon, the bed side, the dressing-table—all of which suggest themselves immediately for wiring. Then there are those elaborate combination-pieces of cabinet-making designed to provide self-contained and invisible kitchenettes in the small high-grade apartment, while in one large New York hotel, reading lamps are affixed to every bed.

The electric outlet under the dining-room table is now an old story. Logically, however, the next step was to have the electric wire follow up a table leg, practically hidden by it, and later by the table braces, from which concealment it is then brought out to such point or points of usage at the table as are deemed desirable. Again the plugging-in point can and should be practically concealed by the table-apron, the necessary receptacle being attached to it, thus avoiding the necessity for cutting into the wood of a valuable bit of furniture. Any table, so wired, will give almost no sign of it, except on careful inspection. Similarly a tea-wagon, wired, is of excellent service in informal entertaining since it can then be directly connected to any available convenience outlet on either the porch, in the living-room, in the library, or at the bed-side. And again, a tea-wagon can be so wired that the treatment is practically invisible; the writer has seen one wagon arranged with the necessary sockets placed on hinged boards, underneath the two ends of the wagon. When not in use, these boards are folded back, so that they and the rest of the wiring are entirely concealed by the leaves of the



The ironing board in use. It is not necessary to conceal the wiring for conveniences not classed with furniture

tea-wagon. Indeed, this arrangement is so inconspicuous that it would not be noticeable were the tea-wagon of the type without leaves. Just what articles of furniture should be selected for similar treatment again depends on the old question,—usage and the scale of living, and that is a question which the architect knowing the needs of the individual family, is best prepared to decide.

Rather different from this decorative phase of furniture wiring is the practical end of it, as pertaining to kitchen and laundry equipment. For

instance, an outlet located on the kitchen table makes for readiness in use of grinding and mixing machines, silver-buffers and the like. And in the laundry, an electric outlet and switch placed directly upon the ironing-board will tend to force safer connecting and disconnecting of a flat-iron, thus preventing blow-outs and eliminating another source of fire-risk. Here of course, the question of concealing the wiring does not enter; it is merely one of practical advantage in usage.

The articles that follow this introduction will take up each department of house-wiring in the appropriate rooms, indicating what is necessary and what is desirable from the standpoint of usage. Questions of taste will be left to the decorator, fine points of illumination to the illuminating engineer. On a subject which permits wide diversity of opinion, the writer does not expect universal agreement with every detail of the wiring plans to be offered, but he does believe that they represent another step in forwarding the development of a thoroughly practical and adequate system of house-wiring, and one capable of great aesthetic development.

BRICK WALLS FOR RESIDENCES*

A Discussion of Proposed Relaxation of Requirements as Influenced by a Loose Construction of the Term "Residence"

BY CHARLES E. WORTHINGTON

(Member N. F. P. A.)

THERE are in the United States about 23,000,000 families out of which about 4,000,000 report to the income tax collectors. Eighty-nine per cent of this 4,000,000 report taxable income of $3,000 or less, which including exemptions is a stated income of approximately $5,000.

The 11% with incomes in excess of $5,000 can take care of themselves. The others feel the pinch in varying degree, but in the main these are able to build when and where they choose without very great regard to small economies. But, with the 19,000,000 families whose income is $2,000 or less the case is different and public policy requires that their needs be carefully considered.

Governments and other economic authorities recognize the evils of too great a floating population and concede the principle that the citizen bound to the soil and his locality by ties of ownership and direct responsibility is on the whole the most desirable citizen. Therefore, public policy requires all possible encouragement of individual holdings in homes and farms and as far as possible discouragement of landlords in so far as it concerns these. This does *not* extend to commercial construction which is on a totally different basis.

The generally accepted rule is that a family may pay for "rent" (which means not alone rent paid to a landlord but the cost of upkeep of owned property in interest, taxes and repairs) not over 25% of the annual income, which on the average of the 19,000,000 families has been estimated at various amounts generally from $1200 to $1400. This "rent" or capitalization in a house occupied by the owner may usually be set at 10% of cost, the landlord, however, having some special expenses in the way of cost of oversight, larger repairs and a necessary provision for periods of vacancy, etc., must exact at least one-half more or 15% (in general the owners of houses built for rental will protest 15% as inadequate). These are of course not accurate figures but accurate enough to serve the purpose.

On this basis one-fourth of $1200 is $300 which accepted as a 10% "rental" means that the average home of the 19,000,000 families will cost $3,000, a cost at present prices involving very strict economy in construction and reacting upon the quality. But it is either this or pay a landlord $450 or more for equal or inferior accommodations, at the same time relinquishing the family privacy and the duties of ownership that make for good citizenship and better morale.

Possibly we are not concerned directly with morale, yet that does react in increased losses; and all people interested in fire prevention (and reduction of the heavy cost of fire protection) are interested in any measure tending toward a safer class of buildings. In general this would be the result of the substitution of brick for wood in all houses not well isolated from others. It is a problem similar to that of the wooden shingle roof, although of not so much importance.

Therefore, if we can without sacrifice of any real element of general protection encourage the greater use of incombustible materials by regulations tending to reduce building cost, the establishment of such regulations and their uniform application is a duty.

* *Continued from page 162, February 15, 1922.*

ALL questions of fire resistance must be determined by actual impartial test, not by mere unsupported opinions, for not only in this case are we to test the value of materials but also the value of all preconceived opinions, adverse or otherwise. In every step of our prior struggles for betterments such opinions (honest or otherwise) have been the barriers to progress. We need to get away from the rather pleasantly diversified region of "thinks" into the more restricted and monotonous territory of "know." Also we should not be content to let "well enough alone," if for no other reason than that we do not know it is "well enough" or that it may not be bettered. Beliefs or preconceived or established opinions are not always to be relied upon; the most extensive graveyard in the world is that in which discredited beliefs, many of them widely prevalent in their day, are buried.

If we are testing hollow brick walls of eight inch thickness, why not walls of all other clay products? We should know the strength of such walls and the effect of varying loads, for a wall strong enough under ordinary conditions to carry the 50 lb. dwelling load may be entirely inadequate for the 125 lb. load assigned to "light mercantile."

Despite Mr. Carver's statement that brick sizes are well standardized such is not entirely the case, except for face brick which so far as sizes go are practically uniform in the United States and Canada and may probably without exception be regarded as possessing adequate crushing strength. It is not face brick that may be used for $3,000 dwellings, but common brick, even the cheaper soft burned grades, and the sizes of common brick offered, at least in the eastern territory, range from what is known as "New York brick" measuring 7½ x 2 x 3½ in. to brick running 8¼ x 2½ x 3¾ in., the latter exceeding the former in volume by about 50%, which would seem a larger variation than "standardization" would permit.

It must be understood that the term "eight inch wall" is commonly applied to walls the length of one brick in thickness. It is not an exact term. Similar nomenclature was formerly used in the case of fire doors, where doors 1¾ in. thick were almost uniformly designated two inch doors, despite the fact that such doors could not be constructed from dressed lumber of commercial size.

A "ROLOK IDEAL WALL" if constructed of face brick, or what we have called for convenience standard size, contains per unit of three brick 45 cubic inches of brick and 28 of air, if of the New York brick size 37.5 of brick and 26.25 of air which is to say that each superficial square foot of wall, the length of one brick in thickness (disregarding any allowance for mortar) will contain, of New York brick 636 cubic inches of brick and 442.8 of air space, if standard size 710.4 brick and 441.6 air. Aside from the uncertainty involved in the use of the loose wording it will be seen that a "New York" brick wall 50 ft. long and 20 ft. high of this dimension will contain 74,200 cubic inches of brick less than one of standard brick, the deficiency being equal to about 1000 "standard" brick.

Taking the same tables the crushing strength (or rather resistance) of brick on edge varies from 119 tons to 1926 tons, which would suggest that for all weights under consideration this factor need not be considered.

There are no tables as regards absorption of moisture and increase of weight thereby, but we do not suggest that the weight increase would form a hazard, although doubtless the generation of steam in the interior of the more absorbent bricks under exposure to heat might affect stability materially. This is an important factor when the matter of direct plastering is concerned, for the evidence that transmission of dampness is entirely through the mortar is unconvincing.

All of these differences affect wall stability: volume of solid brick, moisture absorption and dimensions, not so much in solid walls where the factor of safety is very large but possibly in hollow walls where that factor is reduced and floor weights and the thrust from them are to be considered. These matters may not be considered at length but are quoted more for the purpose of emphasizing the need of incorporating some provision at least for standardizing brick sizes in any specifications in ordinances, and also that they should be considered in tests.

Plaster on wood furring and lath is simply an air space partly lined with moisture *absorbing* (not transmitting) material and enclosed in a sheathing usually more freely permeable to air than brick.

This permeability applies to ordinary brown mortar applied direct, but if transmission of moisture is considerable this will lose its adhesive qualities. Certain "hard plasters" are understood to be free from this objection, but probably as a rule hard plaster or "three coat" work would be more costly than lath and plaster on furring. The extent to which fire hazard is increased by the ordinary furring and lath is a subject of divergent opinion. It would seem (theoretically at least) that hollow walls would avoid the moisture trouble in the main.

This discussion has been confined to brick, but in general the same principles apply to hollow tile, interlocking tile and the many other applications of clay products. They vary so much between themselves that space forbids specific consideration.

Some of these are cast with heavy webs and small air spaces, others with thinner walls are *alleged* to show a disposition to crack, or even pulverize, if water is applied while heated. It is not improbable that many of these are fair equivalents

of hollow brick construction and can be safely used under restriction, a matter that must be determined by test for individual types of construction. No one at this time can presume to decide this positively.

The committee nationally appointed to consider the standardization of building codes is able to handle these questions better than any individual or ordinary group, and it is certainly not with the intent of instructing that committee that this has been written.

That with the proper spacing, sides, front and rear necessary for sanitation it is not possible to create a "congested district" out of private residences with non-combustible walls and roofs hardly needs assertion or demonstration; nor does the present economic need of favoring such construction.

But to concede any relaxation of the standards applying to mercantile construction, however plausible the plea may be, is to let down the bars to future "congested districts" of less substantial construction than are generally provided by existing laws, which existing laws are generally regarded as inadequate. Tenements, apartments and the like are commercial undertakings and in general are not a permanent factor to be considered in connection with the housing shortage. To favor their construction is indirectly to favor increase of floating population, of itself undesirable. That these are necessary and indispensable must of course be conceded but that does not change their status as commercial construction.

IT is so easy to raise such questions as to the construction of dwellings in already congested districts as a means of befogging discussion that it will certainly be resorted to very largely. Nevertheless it is entirely safe to assert that with proper sanitary spacing this matter can be left entirely to natural law and the practical impossibility from a financial standpoint of such construction where it could be considered objectionable.

We have had a good many years of experience with "fire limits," as usually defined, waiting until a certain district is almost completely built over with combustible construction and then drawing an imaginary line about that congested area prohibiting more wooden construction within that area, but permitting the growth of a ring of congestion about it. This has usually worked to the very great advantage of certain real estate interests in such particular localities but has not been conducive to present or future safety or to permanent public interest. Maybe it was the best that could be done under the circumstances, who can say? But *then* is never *now*.

SHRINKAGE STRESSES IN REINFORCED CONCRETE

THE use of steel reinforcement in concrete is justified by the fact that the two materials have practically equal coefficients of expansion. For hard Bessemer steel an average value is 0.0000056 and for soft Bessemer steel an average value is of 0.0000063. Bulletin No. 126 of the Engineering Experiment Station, University of Illinois, entitled "A Study of the Effect of Moisture Content Upon the Expansion and Contraction of Plain and Reinforced Concrete," by Torata Matsumoto, contains the latest data on the coefficient of expansion for concrete. The author as the result of careful tests says:

"The results obtained indicate that the coef-
"ficient of expansion of mortar and concrete is
"practically the same for different proportions and
"ages provided that the same materials are used in
"all mixtures. The average values of the co-
"efficient of expansion of 1:1, 1:2, and 1:3
"mortar, and 1:1:2, 1:2:4, and 1:3:6 con-
"crete, varied from 0.0000050 to 0.0000058 for
"one degree Fahrenheit, with no particular varia-
"tion with the age or with the richness of the
"mixture."

Reinforced concrete is ideal for the interior of buildings in which fairly uniform temperatures are maintained. The poor appearance of faultily executed work on outside structures such as walls, piers, bridges, wharves, etc., leads to the conclusion that the temperature coefficient of expansion has a rival in the moisture coefficient of expansion. Moisture content has the undesirable property of affecting concrete alone; the steel remains unchanged with changes in moisture conditions. Changes in moisture content introduce secondary stresses and Mr. Matsumoto made experiments, the results of some of which are contained in the above mentioned bulletin, in order to determine their magnitude and discover means to circumvent them.

The accompanying cut shows the restraining effect on expansion and contraction exerted by longitudinal reinforcement. Each figure represents one-half the length of a specimen. When a plain concrete specimen is dried out in air all particles have a tendency to move toward the middle of the prism, the amount being indicated by the space between the solid line and dotted line

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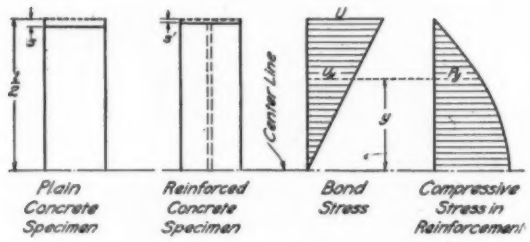
at the upper end. The reinforced concrete specimen illustrates the restraining influence of reinforcement. Since resistance to this displacement actually is offered by the bond resistance between the concrete and the bar, the bond stress developed should be proportional to the amount of the tendency toward displacement. This bond stress is, therefore, greatest at the end of the bar and smallest at the center. If there is no slipping of the bar, a fairly reasonable assumption is that the bond stress varies uniformly from a maximum at the end of the bar to zero at the middle of the length of the bar. The shrinkage stresses in the steel and concrete are found to be directly



Half length of specimen. Bond stress is maximum at end and compressive stress in concrete is maximum at mid-length

proportional to the amount of shrinkage in plain concrete. The stress in the steel decreases and the stress in the concrete increases with an increase in the percentage of reinforcement.

The pamphlet is deserving of careful study. The author lightly passes over some tests on limestone, which appear to the writer of this review as possessing great significance.

A lean limestone concrete may prove to be a valuable covering for reinforced concrete in exposed situations provided the matrix contains a special cement, perhaps one high in iron. The author offers the following comments; part of them relate to the concrete used in the tests and part are inferences based on his general experience and observation:

1. Concrete expands when it absorbs moisture and contracts when it is dried. Concrete of a 1:2:4 mixture is likely to contract during hardening as much as 0.05 per cent in an ordinary structure.

2. Contraction of concrete by the loss of moisture causes stress in the concrete when it is restrained by an external force. The amount of this stress is not as small as is generally supposed.

3. The shrinkage stress caused in the steel in reinforced concrete may reach the usually accepted working stress of steel when the amount of reinforcement is less than 1.5 per cent.

4. The shrinkage stress developed in 1:2:4 concrete may reach the ultimate tensile strength of the concrete when the amount of reinforcement is greater than 1.5 per cent. With richer mixture the increase in shrinkage stress may be relatively greater than the increase in ultimate strength.

5. The greater the percentage of reinforcement the greater the tensile stress that may develop in the concrete, and concrete having a higher percentage of reinforcement than 1.5 per cent is likely to have cracks formed unless proper provision is made.

6. In reinforced concrete out of doors, subject to alternate wet and dry conditions, cracks may readily be formed under the repeated stress which is nearly equal to the tensile strength of the concrete.

7. Reinforced concrete does not appear likely to be a durable material in a place where a corrosive influence on steel, such as sea air, is active, unless proper protection against the formation of shrinkage cracks is made.

8. It is suggested that the prevention of shrinkage stress in concrete might be accomplished in two ways, either by finding a cement giving less expansion and contraction, or by the use of a perfect waterproofing treatment.

9. It may be expected that an integral waterproofing compound might lessen the change of volume for a short time, but it would not prevent the final diffusion of moisture with consequent change in volume.

Promoting the Sale of Brick

AT the annual brick convention at St. Louis recently Mr. Ralph P. Stoddard, Secretary of the Common Brick Association of Cleveland, mentioned a scheme now being worked out, whereby any responsible head of a family of good character who desires to own his own home will be aided from a central million dollar fund subscribed by the brick industry. Each loan must be approved by the local brick manufacturer and by a responsible local bank or building and loan association, which latter will have the actual handling of the money. This loan will help fill the gap between the amount normally loaned on construction and the cost of the house. Loans will be made only on houses with brick walls.

This action on the part of the brick manufacturers is added proof of the belief that no great reductions in wages and cost of materials may be counted upon for at least five years.

Fire Tests of Concrete Columns

THE Bureau of Standards announces that the manuscript is now nearly completed for a Bureau Technologic Paper containing a complete report on the investigation on the fire resisting quality of concrete columns.

New Stadium for the University of Pennsylvania

MR. CHARLES KLAUDER, Architect, Philadelphia, Pa., is architect for the new steel and concrete stadium to be erected on Franklin Field, University of Pennsylvania, Philadelphia. The stadium will seat sixty thousand spectators and is to be completed in time for the Army-Navy Football Game in the Fall in 1922.

The engineering plans are now in progress in the offices of McClellan & Campion and Gavin Haddon, Philadelphia and New York. Mr. Haddon was a Captain of Engineers in France and Wm. H. Gravell, of the firm of McClellan & Campion, was a Major of Engineers in France during the war. Major Gravell was the author of an article on Light Weight Concrete Floors in THE AMERICAN ARCHITECT, Dec. 7, 1921.

A New High Explosive

FROM Brazil comes the report of the development of a new explosive for blasting purposes, with possible value in war. The name of Brazilite has been given to it and the reports of recent tests indicate that it is safer and more powerful than dynamite. When detonated no gases, prejudicial to operators are given off. All mechanical and chemical tests were passed successfully without explosion. It can be detonated only in a certain manner. In one of the experiments 12.4 pounds were placed in an ordinary bored hole having a depth of 15.26 feet, the detonation displacing 262 cubic yards of granite.

Drilling With Soft Iron

A WRITER in *Tilecraft* tells about a contractor who discovered that one of his men was drilling holes in tile bathroom fixtures about four times as fast as the other workers. Asked to explain his method, the worker demonstrated how cut nails were used in place of the ordinary twist drill. He filed the heads of two nails so that the nails would lie close together, and put them into his brace as he would a drill. He started the hole with the point of a screw driver or similar tool, and then applied the nails, which penetrated into the tile much faster and with less loss than the twist drill. When the nails become dull, a new pair is inserted.

Chimneys and Fireplaces

A BULLETIN with this title, written by A. M. Daniels, M. E., has been issued by the U. S. Department of Agriculture.

Though the use of the fireplace is one of the oldest methods of house heating there are few who understand the principles of its action. No defect in the construction of the house detracts more from the comfort of the home and none is a greater menace to life and property than a poor chimney and fireplace.

The Cost of Buildings

THE following figures show the distribution of labor costs in a six-room house used for dwelling purposes.

TOTAL LABOR COST, 100%

Trade.	Frame House.	Brick House.
Carpenter	49.6	32.2
Bricklayer	6.2	21.5
Hod carrier	2.2	6.7
Plasterers	7.9	8.8
Plumbers	8.7	7.6
Electricians	2.6	2.5
Painters	10.0	6.3
Common labor	6.3	9.9
All others	6.5	4.5
Total	100.0	100.0

The figures are given out by the Division of Building and Housing, U. S. Department of Labor and are the result of a study of labor costs on a large number of six-room brick and frame houses throughout the country. The figures are general and are an average of percentages in various localities.

It is hoped that within a short time the costs of materials and the distribution of costs of classes of work, including labor, will be published. At present based on the assumption that the labor cost on a building is one-half the total cost, the cost for material only for various items may be roughly approximated from the above data.

In the New Building Estimator by William Arthur the following average distributions of cost are given for a large number of all classes of buildings.

Class of Work	Frame Buildings	Brick Buildings
Excavation, Brick and Cut Stone	15.8	41.0
Plaster	8.3	5.6
Lumber	19.3	11.0
Millwork and Glass	20.6	12.0
Carpenter Labor	17.9	9.0
Hardware	3.5	2.5
Tin and Galvanized Iron	2.3	3.0
Plumbing and Gas Fitting	6.8	4.3
Paint	5.5	3.4
Iron and Steel		5.6
Roofing		2.6
Total	100.0	100.0

For five good brick houses ranging in cost from $8,200 to $38,000, built about 25 years ago, the following averages were obtained,

Class of Work	
Excavation, Brick and Stone	36.58
Plaster	5.98
Millwork and Glass	19.68
Lumber	11.76
Carpenter Labor	9.25
Paint	5.58
Hardware	3.10
Tin and Slate	4.60
Plumbing, Gas, Etc.	3.47
Total	100.00

The best that can be said for averages is that they are better than nothing and may be of value in making preliminary estimates. Tables of average costs are helpful only for limited areas within defined localities.

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REVIEW OF RECENT ARCHITECTURAL MAGAZINES

BY EGERTON SWARTWOUT, F.A.I.A.

THE Architectural Record, January. The opening article is the first of a series on Architectural Polychromy by Leon V. Solon. It is a little early to speak critically of Mr. Solon's work, as the present article is only introductory, but it is encouraging to find a paper of this kind in an architectural magazine. Such magazines nowadays are mostly pictorial, and it is to be supposed that their editors make them so because the bulk of their readers demand that sort of thing. And so when a serious article, which should be of interest to the profession generally, is published, it must, if it is to be read at all, be written so simply and entertainingly that the casual reader will be encouraged to finish it, and attention must be drawn to it by illustrations. That such a state of things should exist is a sad commentary on modern taste, but it does exist. We are all of us the victims of hand feeding. Everything is canned and then highly spiced and fed to us in a somewhat diluted but easily digested mess. We may, and I think we probably will, get fed up with it, and return to the earlier and more difficult but better method, but until we do, articles on such subjects as Polychromy will have to be a little more simply written than is Mr. Solon's, in order to be generally popular. The illustrations, which have nothing particular to do with the introduction and which are palpably inserted for the reasons above described, are interesting, but as only the frontispiece is in color, convey little impression, to the lay reader at least, of what it is all about.

From "The Architectural Review, London"

The Steps at Azzano, Lago di Como

There are some good photographs of a house in California made from a clubhouse originally designed by Francis Wilson and remodelled by Reginald D. Johnson, Mr. Johnson's part, as the article has it, being "mainly one of pure design." Unfortunately there is no photograph of the building as it originally was, so it is difficult to estimate just how much pure design was contributed by Mr. Johnson, but from the illustrations the results are good.

The Hanna Building in Cleveland, by Charles A. Platt, is described in an article and rather fully illustrated. The building is a simple, strong, rusticated structure which is capable of sustaining the heavy projecting cornice, is well proportioned and devoid of useless ornamentation. The New York Zoning Laws have led to very general abolition of the cornice on high buildings and to a more rational finish of the upper stories, but the Hanna Building is not so very tall as office buildings go, and is of such generous proportions, with a frontage on three streets, that the heavy cornice is not objectionable, but on the contrary, is a decided feature in the design.

Clarence W. Brazer has a small War Memorial which is not particularly happy in its shape, and there are two illustrations of the Federal Reserve Bank in Richmond by Sill, Buckler, and Fenhagen which are remarkably interesting, but so fragmentary that the complete design cannot be determined. Welles Bosworth has a photograph of the Scarborough School which is a very charming soft-focus picture in which there is a decorative tree, a lamp, some steps and a boy running down them, but very little school.

Francis A. Nelson's Huguenot Memorial Church has been noticed in a previous review as one of the good results of competition. The photographs show one questionable thing which of

course is not confined to Mr. Nelson's work, but which is general to most similar structures; the use of carefully finished and more or less elaborately detailed cut stone work in conjunction with rock faced ashlar. Of course there are numerous precedents for it, but in the old examples time and ivy have done their part and the church has pulled together; but in spite of the precedents, it is probable Mr. Nelson could have obtained a finer effect with much less trimming. Just how the tracery could have been done this reviewer refuses to commit himself, but it would have been interesting to have tried it.

Harold Eberlein has another article on Italian Villas, this time on the Poggio Torselli built in the 17th Century Baroque. It is commonplace enough and hardly seems worth publishing, although there is a view of the entrance to the Chapel which is not only a good photograph but an interesting composition. There is also an article by Mildred Stapley about a statue in Siguenza, Spain, which is worth reading and some views of La Rabaterie, near Tours, a picturesque place which owes its chief interest to the fact that it was once the home of Olivier le Daim, or more colloquially, le Diable. One thing is certain, Olivier never practiced his first profession in that house because he never could have gotten enough light but it was admirably suited to his last.

From "The Architectural Review, London"

Olive-Tree at Varenna, Lago di Como

The Architectural Forum, January, is devoted chiefly to Banks, and Alfred Hopkins opens the number with "Some Ideas on Bank Buildings—Artistic and Practical." The practical ideas have been expressed many times before in greater detail and it is always difficult to illustrate one's artistic ideas by pictures of one's own work. The exterior of the Adirondack Trust Co. Building is not very novel but is simple and good and the sketch for a Mt. Kisco Bank looks promising, but Mr. Hopkins' banks have not the distinction that is present to a remarkable degree in his farm buildings and country work.

Walker and Gillette have some illustrations of the interior of the New York Trust Co., the feature of which is the treatment of the four structural columns in the public space. The room is in the lower story of an office building and the architects in their desire to give an effect of greater height have omitted all entablature over the columns and have finished the ceiling in flat panels a few inches above the top of the caps, the mouldings of the slightly irregular octagonal panel over the column being reversed to come down on top of the cap, the panel itself being merely one of many similar panels with which the ceiling is covered. It is an interesting attempt and well executed, but the result is not satisfactory. The columns appear detached from the ceiling and are casual. In McKim, Mead and White's Banking Room for the Uptown Branch of the City National Bank, a somewhat similar condition existed and was solved by them in the usual and conventional manner, with generally better results.

There seems to be a great demand for the publication of Italian Villas for in this number we have the Villa Velluti, number five in the Villas of the Veneto series. It is a rather late example and has nothing particular to recommend it, the main elevation being bare and without charm, with a curious arrangement of dormers at the apex of the roof. The dependencies, however, are very picturesque and charming.

The Stanford White Memorial Doors in the Library of the New York University, designed by his son, Lawrence Grant White, are a very good solution of the practical problem of a built up door and are well modeled.

Under the heading "Straight Talks to Architects," C. Stanley Taylor takes up the old, old story of professional charges. It has been threshed over thousands of times, and will be what is known as a live topic when the Millenium comes. Mr. Taylor's article is interesting and what it has to say is well said if not novel, but who shall say

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what is the right way? Each man will do more or less what he pleases; but it should not be forgotten that the flat fee rate has obtained a certain recognition as a legal precedent which is not lightly to be thrown away. Mr. Taylor seems to think owners give greater care to the selection of their architects now and demand greater service than formerly. They certainly demand more services but do they exercise more care in their selection? We think not. Certainly not in proportion to the services they demand. Mr. Taylor

From "The Architectural Forum"

Detail of Officers' Space
Uptown Branch Building, National City Bank, New York
McKim, Mead & White, Architects

also touches lightly on the matter of ethics in "competing knowingly for employment on the basis of professional charges." It is a very delicate point, that, and one that the Institute is now attempting to define. There may be a ruling found that will fit all cases but no one but the architect himself is competent to tell what his services are worth for one particular piece of work at one particular time.

Architecture, January. The frontispiece is an excellent photograph of the Lafayette Memorial in Prospect Park, by Daniel Chester French, the architectural work being done by Henry Bacon. It is well modeled and well composed, but the slightly segmental head which is a beautiful line in the bronze tablet becomes unmeaningly bent in

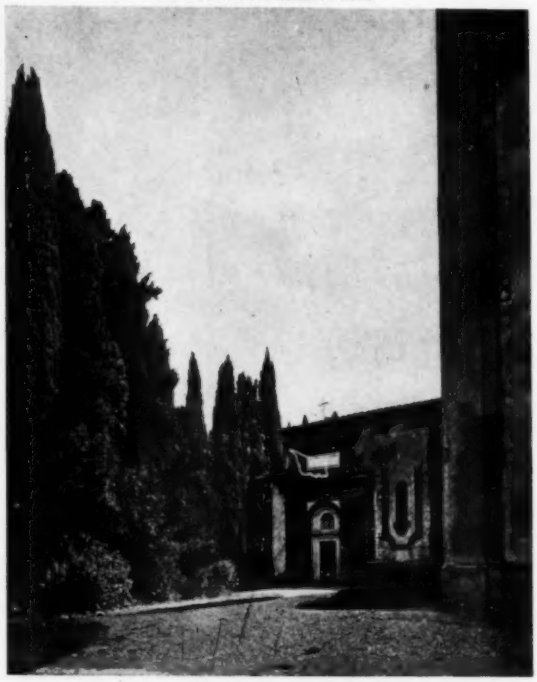
From "The Architectural Review London"

Manitoba Parliament Building, Winnipeg

the unbroken cornice above. The Lafayette Statue, at the college of the same name, is in a way the same as the central figure on the Prospect Park tablet, but is even finer, the statue silhouetting beautifully against a circular head white door some distance behind it.

Murray P. Corse's article on "Puritan Architecture" is carefully written and of interest. The Chemung Trust Co. by Dennison and Hirons is good and rather unusual, especially the treatment of the ceiling. The ceiling panel is very effective but the painted decorations in the vaults seem rather light in character and detail.

From "The Architectural Record"

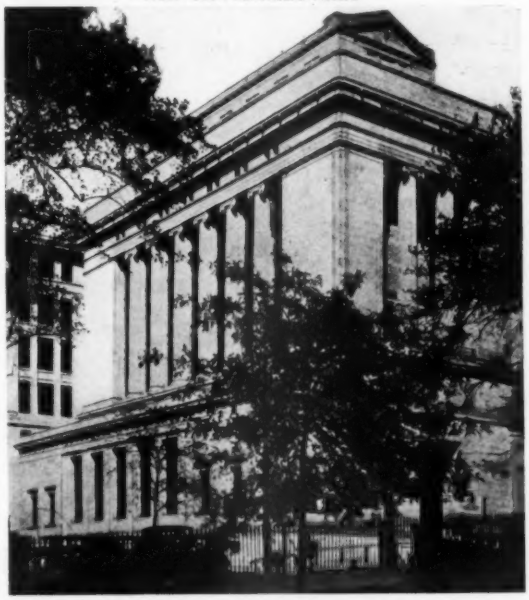


Chapel Entrance, at East Side of North Front
Poggio Torselli, San Casciano, Val Di Pesa, Italy

St. Michael's Church, Litchfield, Conn., by Rossiter and Muller is a very successful building, simple and well proportioned. The interior view of the nave seems a little bare and the contrast between the woodwork of the ceiling and the plaster of the side walls is rather abrupt, though much of this effect may be due to the flashlight photograph. There is an article on the life and work of the famous French cabinet maker, André-Charles Boulle, which is interesting.

The Architectural Review, London, January.

From "The Architectural Record"



Federal Reserve Bank, Richmond, Va.
Sill, Buckler & Fenhagen, Architects

The feature of this issue is the Manitoba Parliament Building, Winnipeg, the architect of which is Mr. Frank Worthington Simon, F. R. I. B. A. The plan is an unusual one for a monumental building, being H shaped, and is about 335 feet square. The projecting wings which form the sides of the H are relatively thin as they consist of two rows of offices with a central corridor; the corridors are continuous and the lighting excellent; in fact it seems a very practical plan indeed. But it is not a monumental plan. The wings are as high as the central portion and the composition, therefore, does not mass, and although a quartering view is not given, the general effect cannot be good. There is a central dome which is flanked on one side by a monumental stairway and on the other by the Legislative Hall. The dome is not high and has no pendentatives, but is carried directly on two coupled columns at the angles. The outside dome is only for exterior effect as the inner dome does not come higher than its base. The exterior is simple and the fenestration good but the dome itself is not so successful. It is more a scheme for a lantern than a dome and the top of the dome, which is apparently gilded, is too flat. The semicircular head opening in the box of the dome seems to give light through a panel in the inner dome which is also apparently lighted from an oculus in the center. In size this building compares with some of our later State Capitols, possibly one-fifth smaller than the Missouri State Capitol, and as it was built at practically the same period a comparison of the cost is interesting. The Missouri State Capitol cost about $.35 a square foot and the Winnipeg Building $1.15 a square foot, the total cost of the one being somewhat over three million dollars and the other over eight million dollars.

There is also an article on Pergolesi and Robert Adam, on the disputed question as to whether Pergolesi did or did not do Adam's work for him, and there are some very remarkable photographs of Italian Scenery by H. R. Campion, two of which are herein reproduced.

The Architects' Journal, London, December 14, takes up the question of higher buildings for London and gives interviews for and against. At present the London Building Act limits the height to 80 feet, and the new propositions are to increase this to 120 or 150 feet. It seems a pity, but probably they will do it. In this number is also illustrated the premiated design for the Birmingham Hall of Memory, a memorial to those who fell in the War, which was won by S. N. Cooke, and W. N. Twist, FF. R. I. B. A.—a small domical structure containing a cenotaph. The only thing remarkable about the design is the introduction of a row of windows in the attic which are certainly no advantage to the elevation and which light nothing inside.

From "Architecture"

Lafayette Memorial, Prospect Park, Brooklyn, N. Y.
Daniel Chester Frank, Sculptor Henry Bacon, Architect

The Western Architect, December, contains nothing of interest but some rather spectacular drawings for a Mausoleum in California by Willis Polk.

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The purpose, simply stated, is to afford an organization which, it is believed, will become a most important element in architectural practice and building operations, a medium through which it may, without expense to itself, reach a class of readers that are most intimately identified with the field of the activities of The American Specification Institute.

Publishers, The American Architect and The Architectural Review

The Winter Conference

THE Winter Conference was held on the evening of February 10 at the Chicago Engineers' Club, Chicago.

Mr. E. B. Wilson, president of the American Bureau of Inspections and Tests read the following paper.

Mr. President and Gentlemen:

I would like to preface my remarks with the statement that ten years ago the building of concrete roads was started, and at that time about as much thought was given to concrete for roads as the average contractor today gives to concrete for buildings. Concrete roads were built in 1910 and 1911 and were topped in 1912. It was pretty quickly seen that such roads must be constructed better or the use of concrete in highway construction would stop. We all know what the road program now is. The point is that bad concrete shows up in road construction, while in building work the first intimation that the structure has only a fraction of the strength desired and paid for, comes through a collapse.

In 1918 the Structural Material Research Laboratory brought out its Bulletin No. 1, entitled "Design of Concrete Mixtures," as a result of Professor Abrams' tests and investigations. This was the first real step toward better concrete in building work. In June, 1921 the Joint Committee on Specifications for Concrete and Reinforced Concrete, presented to the engineering profession a Progress Report which includes tables showing the proportionings required for concrete of given strength, using several different gradings of fine and coarse aggregate and different consistencies. From these tables which are based on the work of Professor Abrams, it can be seen that in order to secure a 2000 pound compressive strength concrete at 28 days, when using a 0 to No. 28 fine aggregate and No. 4 to 3/4″ coarse aggregate and a slump of 8″ to 10″, the proportions should be 1:0.8:1.9, while for the same strength concrete of the same age using 0 to No. 4 fine aggregate, 3/4″ to 2″ coarse aggregate and 3″ to 4″ slump, the proportioning should be 1:3.1:4.3. The latter mix which, of course, would not be interchangeable with the former in most instances, takes about one-third as much cement as the former for the same strength results. The worst element entering this variation is the water, and the same table shows that when using 0 to No. 4 fine aggregate and No. 4 to 1½″ coarse aggregate and a slump of 6 to 7 inches, the proportioning should be 1:1.7:3.4, and with the same aggregate and a slump of 8 to 10 inches, it should be 1:1.0:2.4 or an increase of over 30% in the amount of cement required, because of the addition of approximately 20% water. The 6 to 7 slump is sufficient for most work, but it is only too true that slumps from 8 to 10 and even worse, if the consistency could be similarly measured, are being tolerated on most of the structures now being built. These tables show that under conditions existing in Chicago, the strength of the average concrete can be increased 30% by either adding 30% cement or eliminating 20% of the water.

The method of making the slump test is covered by a standard of the American Society for Testing Materials. A truncated cone shaped metal mold, 12″ high, 8″ in diameter at the base

and 4″ in diameter at the top and provided with handles at the sides, is filled with the concrete at the point of deposit, the concrete being introduced into the mold in several layers, and lightly tamped, after which the mold is removed vertically and the slump or settlement of the concrete is noted. This test is the most practical one yet devolved for maintaining uniform consistency of concrete. The greater the slump, the weaker the concrete. It is evident, therefore, that the least water possible should be used in providing a concrete that can be satisfactorily deposited.

The specifications submitted tonight by the Specification Institute for discussion, appear to be a very reasonable interpretation of the recommendations embodied in the Joint Committee Progress Report. The features embodied, which present the greatest difficulty of operation, is the use of fractional proportioning, accurate measurements of aggregates and the changing of the proportioning readily when necessary because of variations in aggregate grading and changes in the consistency or workability of the concrete.

There is now under way in Chicago the construction of a building under specifications for concrete which are almost identical in substance with those presented tonight. They were drafted from the Joint Committee Progress Report and include positive measurement of aggregates, control of operation of mixer and require fixed consistency. Field control consisting of progressive sieve analysis, slump tests and compression tests are also provided for. The contractor, having modern mixers, had only to consider especially the positive measurement of the aggregates required to be done in a measuring charging hopper or skip.

Special batch boxes and skips to meet this end have been developed by the speaker, and for this particular job a wooden rectangular batch box with two movable partitions and drop bottom has been adopted. The total capacity of the two end compartments is fixed at the capacity of the mixer, materials measured loose. As will be explained later, however, provisions have been made for varying this total capacity when not operating the mixer to capacity.

This box is placed directly over the batch hopper accompanying the mixer; one end compartment is used for the coarse aggregate and the other for the fine aggregate and cement. The box is charged by dumping from wheel-barrows over the ends of the box, the cement being placed between two layers of fine aggregate to reduce the loose volume of the cement to approximately one cubic foot. The partitions are higher than the sides to prevent overflow of aggregate into the center compartment, which compartment, by the way, may be used for the cement, if desired. A strike board mounted on a handle, similar to a hoe, is provided and each partition is constructed with a shelf on the near side, as a bearing for one end of the strike board. With the partitions set to provide the required amount of coarse aggregate in one compartment and fine aggregate plus cement in the other, no measuring has to be done with the exception of the cement, a sack of which is considered to be one cubic foot. The aggregates are leveled off with the strike board and the excess is pushed back for use in the next batch.

As a part of the field control instructions issued by us for a job, there is included a work sheet which simplifies the application of the finer proportioning. In this case work sheet "D" is used. It requires only knowledge of the mixer capacity, the sectional area of the batch box, and the grading of the aggregates intended to be used. Simple formulae are used to determine the length of each compartment for each particular mix and slump; also the compartment lengths can be readily figured to permit a reduced charge for the mixer, which will often be found to be necessary unless sacks of cement are split. Splitting should be done by weight only. Through the use of the work sheet it is possible to schedule for the inspector on the job, in a very few minutes after the grading of the aggregates is known, (1) the number of sacks of cement to be used and (2) the length of the aggregate compartments for several combinations of aggregates under two or more consistency conditions. The partitions in the box can be changed as quickly as they can be unbolted and secured in the new positions.

The principle involved in the construction of the batch box described is applicable to several different forms of batch boxes, as well as to skips for side loading, and to measuring wheel-barrows, none of which, however, would be required in the case of large jobs where it is practical to employ storage bins and aggregate weighing device. The speaker has not seen any measuring gate or device which is adaptable to conditions surrounding building construction in general, and which would in any sense meet the needs of finer proportioning as covered by the specifications under discussion.

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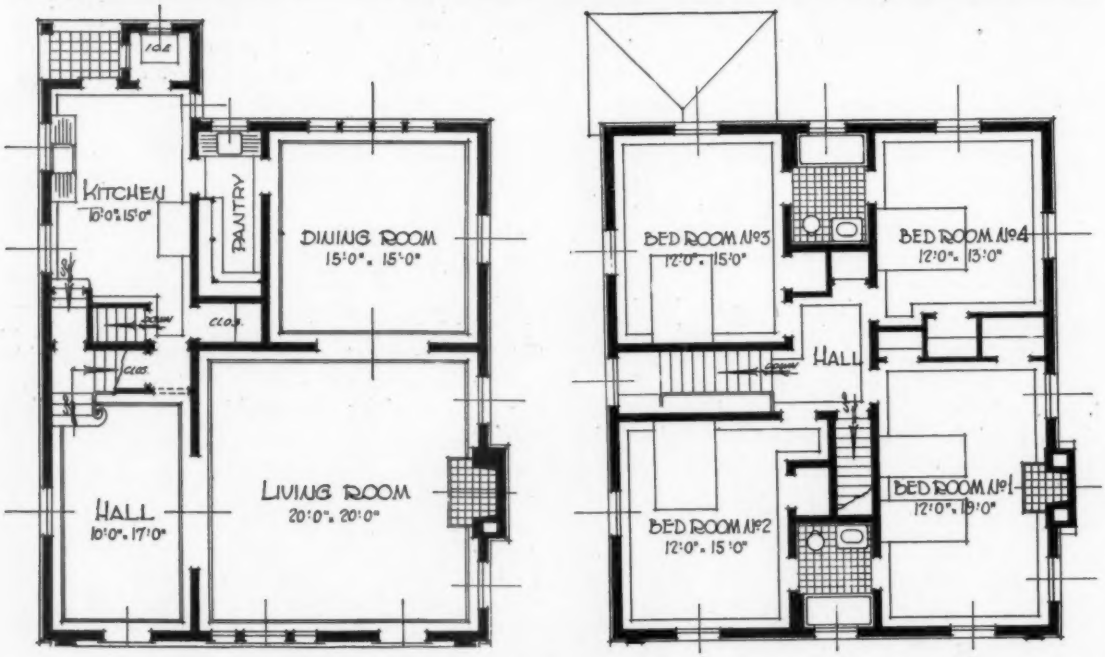
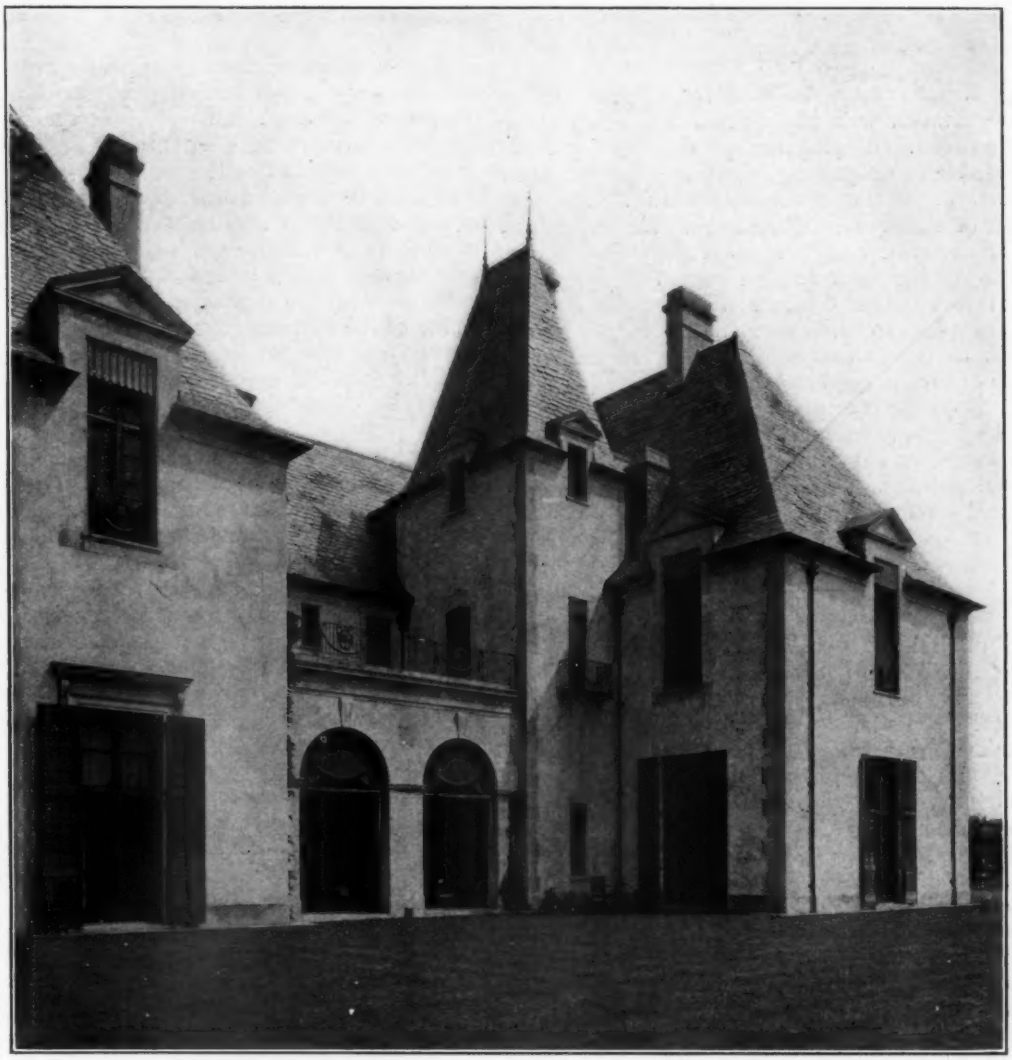


HOUSE OF WALTER MERRITT, ESQ., TENAFLY, N. J.

R. C. HUNTER & BRO., ARCHITECTS



Otto Kahn Residence, Cold Spring Harbor, L. I. *Delano & Aldrich, Architects.*

Tudor Stone Roofs

Soft blending of colors and a texture that is wrought by hand combine to give these roofs, even when new, that seasoned, mellow appearance which generally time and the elements only can impart.

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The New Athens

AN interesting study of the modern city of Athens, with photographs and drawings illustrative of city planning progress there, is made available to readers of French in the tenth issue (Oct. 15, 1921) of *La Vie Urbaine*. The relation of the growth of the city to the topography with its encircling hills is brought out clearly, as is also the too frequent disregard of topography in laying out numerous sections on the checkerboard plan, so often seen in the United States, with its unfortunate results. This excellent outline of present conditions in Athens and plans for its future were prepared by M. Michel Lheritier.

In the same issue of *La Vie Urbaine* is a study of streets and dwellings in Marseilles, in which development of the typical present day house is traced through a long period of history, by Professor Gaston Rambert of the Toulon High School.—HOUSING BETTERMENT.

Rebuilding Belgium

EWART G. CULPIN, former Secretary of the Garden Cities and Town Planning Association and Honorary Secretary of the International Garden Cities and Town Planning Association, has recently been making a close study of the work of rebuilding the devastated regions of Belgium, states the January issue of *Housing Betterment*.

In the magazine *The Builder* (London), he has a series of interesting articles describing the various problems involved in the situation. These articles are to be found in the issues of November 11, November 25, and December 9. All students of town planning and housing should avail themselves of these articles, if they wish to understand the Belgian situation. Illustrations show the Garden Suburbs of Roulers, Ligy near Ypres, Kalfvaart near Ypres, Nieuport, Comines, Dixmude, Menin and others.

A Unique Scheme in Buenos Aires

RECENT reports from Buenos Aires describe a plan which the municipal authorities of that city have recently inaugurated and embodied in an ordinance enacted by the Municipal Council which contains many unusual features, as a means of stimulating building construction of dwelling houses and meeting the housing shortage.

The city will use such of its real estate as is unimproved or is occupied by old and inadequate structures as sites for the construction of modern houses. It will hand over such property for a period of 25 years, without any kind of annual rental or remuneration, to concessionaires, who will be required to erect houses thereon representing a minimum value of twice the value of the land occupied by such buildings. The buildings must conform to the municipal regulations, and must be for residential purposes only, except that the first floor may be used for business purposes. It is further required that the work of construction be begun and finished within specified periods. A deposit equal to 10% of the value of the building plot is required of the concessionaires and is returned to them when the building has been covered with a roof. Exemption from the usual building taxes and exemption for a period of five years from the payment of current rates, such as for lighting, road cleaning, etc., is granted; the latter, however, applying only to houses built in the years 1921, 1922, and 1923.

The contracting parties may not charge rent exceeding an amount calculated to give a 9% return on the capital invested in the construction of the building. They are further required to attend to and pay the cost of upkeep of such buildings. At the end of the 25-year period the buildings pass into the control and ownership of the municipality without any indemnity to the concessionaires. In certain instances the municipality may administer the property for the last five years of the contract period. It will be interesting to see how this unique plan works out in practice.—*Housing Betterment.*

Awards for Designs of Model Tenements

THE awards for designs in the final competition for model tenements, held under the auspices of the Chamber of Commerce of the State of New York, the Merchants' Association and other affiliated business organizations, were recently announced by the jury.

The first prize in Class A, consisting of the commission to erect a model tenement house on a lot 100 x 100 feet, in accordance with the designs submitted, was awarded to Sibley & Fetherston, of 101 Park Avenue; the second prize of $1,500 to Frank J. Schefeik, of 4168 Park Avenue, and the third prize of $1,000 to John Tompkins, 139 East Fifty-third Street.

In addition to these prizes a supplementary prize of $100 was awarded to Raymond M. Hood, of 7 West Forty-second Street, for his plan submitted in the preliminary competition under Class B, the terms of the competition providing that plans submitted under these and the "special classes" need not conform strictly either to the requirements prescribed by the program or to the present tenement house law.

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TOWER OF ST. MICHAEL, SARAGOSSA